MDX-C8900

SERVICE MANUAL

US Model
E Model

Refer to RM-X4S Service Manual (9-925-698-[illegible]) issued previously for information of remote commander (RM-X4S) supplied with this set.

Model Name Using Similar Mechanism	MDX-C7900
Base Mechanism Type	MG-164KS-138
Optical Pick-Up Name	KMS-241A/J2N

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS (US Model)

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
19 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

Other specifications

MD player section

Signal-to-noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 W*

** This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Tuner section

FM

Tuning range	87.5 – 107.9 MHz (US) FM tuning interval: 50 kHz/200 kHz switchable 87.5 – 108.0 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step) (E)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.7 % (stereo), 0.4 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

AM

Tuning range	530 – 1,710 kHz (US) AM tuning interval: 9 kHz/10 kHz switchable 531 – 1,602 kHz (at 9 kHz step) 530 – 1,710 kHz (at 10 kHz step) (E)
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	30 μV

– Continued on next page –

FM/AM MINIDISC PLAYER

SONY®

MICROFILM

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	45 W × 4 (at 4 ohms)

General

Outputs	Line outputs (3) Power antenna relay control lead Power amplifier control lead Telephone ATT control lead Illumination control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 180 mm ($7\frac{1}{8} \times 2 \times 7\frac{1}{8}$ in.) (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 160 mm ($7\frac{1}{4} \times 2\frac{1}{8} \times 6\frac{1}{8}$ in.) (w/h/d)
Mass	Approx. 1.5 kg (3 lb. 4.9 oz.)
Supplied accessories	Rotary commander (1) Parts for installation and connections (1 set) Front panel case (1)

U.S. and foreign patents licensed from Dolby laboratories Licensing Corporation.

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

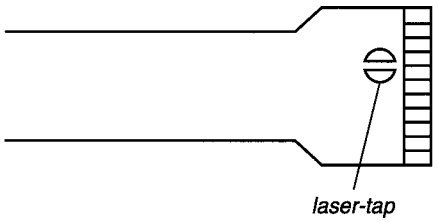
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

Never look into the laser diode emission from right avove when checking it for adustment. It is feared that you will lose your sight.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KMS-241A/J2N).

The laser diode in the optical pick-up block may suffer electrostatic break-down easily. When handling it, perform soldering bridge to the laser-tap on the flexible board. Also perform m easures against electrostatic break-down sufficiently before the operation.
The flexible board is easily damaged and should be handled with care.



OPTICAL PICK-UP FLEXIBLE BOARD

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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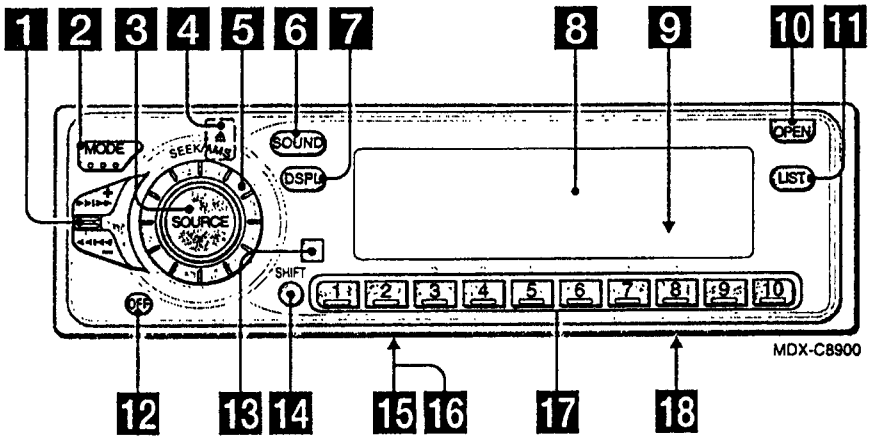
This section is extracted from instruction manual.

SECTION 1
GENERAL

Location of controls



EN

Refer to the pages for details.

1 **SEEK/AMS (seek/Automatic Music Sensor/manual search) control** **9, 11, 12, 14, 21, 22, 23, 26, 32**

2 **MODE button 13, 14, 20, 22, 25, 32**

3 **SOURCE (TUNER/CD/MD/TV) button** **8, 9, 13, 14, 19, 20, 22, 25, 28, 30, 31, 32, 34**

4 **⏏ (eject) button (located on the front side of the unit behind by the front panel) 8**

5 **Dial (volume/subwoofer volume/bass/ treble/left-right/rear-front control)** **7, 15, 18, 24, 28, 29, 30, 31**

6 **SOUND button 18, 28, 29, 30, 31**

7 **DSPL (display mode change) button** **9, 15, 20, 25, 26**

8 **Display window**

9 **Reset button (located on the front side of the unit behind by the front panel) 6**

10 **OPEN button 6, 8, 36**

11 **LIST button**
Disc Memo **24, 25**
DSP Custom File **28**
List-up **16, 26, 33**
Station Memo **15, 33**

12 **OFF button 6, 8**

13 **Sensor for the optional wireless remote**

14 **SHIFT button**
PLAY MODE **10, 11, 12, 13, 14, 21, 22, 23, 24, 26, 27, 28, 32**
REP **10, 21**
SET UP **7, 9, 19, 20, 31**
SHUF **10, 21**

15 **POWER SELECT switch (located on the bottom of the unit)**
See "POWER SELECT Switch" in the Installation/Connections manual.

16 **Frequency select switch located on the bottom of the unit) (E)**
See "Frequency select switch" in the Installation/Connections manual.

17 **During radio reception:**
Number buttons 14
During CD/MD playback:
Direct disc selection buttons 21
During TV reception:
Number buttons 32

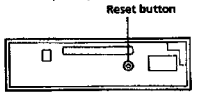
18 **LIN OUT/IN SELECT switch (located on the bottom of the unit)**
See "LINE OUT/IN SELECT switch" in the Installation/Connections manual.

4

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Press the reset button with a pointed object, such as a ball-point pen.



Note
Pressing the reset button will erase the clock and some memorized functions.

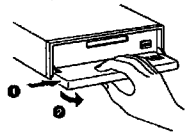
EN

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

1 Press (OFF).

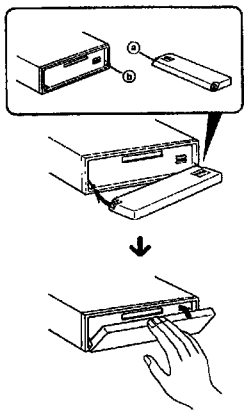
2 Press (OPEN) to open up the front panel, then slide the front panel to the right side, and pull out from the left side of the front panel.



Notes
- *Do not place anything on the inner surface of the front panel.*
- *Be sure not to drop the panel when detaching it from the unit.*
- *If you detach the panel while the unit is still on, the power will turn off automatically to prevent the speakers from being damaged.*
- *When you carry the front panel with you, put it in the supplied front panel case*

Attaching the front panel

Place the hole Ⓐ in the front panel onto the spindle Ⓑ on the unit as illustrated, then push the left side in.



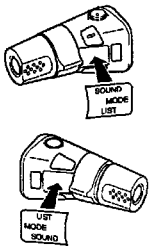
Notes
- *Be sure not to attach the front panel upside down.*
- *Do not press the front panel hard against the unit when attaching it. Press it lightly against the unit.*
- *Do not press hard or put excessive pressure on the display windows of the front panel.*
- *Do not expose the front panel to direct sunlight or heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight where there may be a considerable rise in temperature.*

Caution alarm

If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds (only when the POWER SELECT switch on the bottom of the unit is set to the Ⓐ position).

Preparing the rotary commander

When you mount the rotary commander, attach the label as shown in the illustration below.

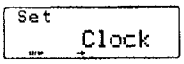


Setting the clock

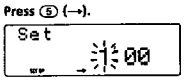
The clock uses a 12-hour digital indication.

Example: To set the clock to 10:08

1 Press (SHIFT), then press (3) (SET UP).

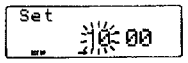


❶ Press (5) (→).

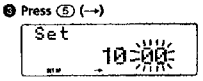


The hour digit flashes.

❷ Set the hour.

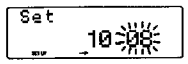


❸ Press (5) (→)

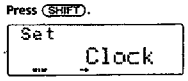


The minute digits flash.

❹ Set the minute.



2 Press (SHIFT).



The clock starts.

continue to next page →

EN

Getting Started

3 Press (SHIFT).
After the mode setting is complete, the display returns to normal playback mode.

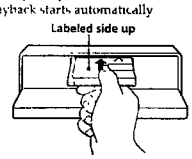
Note
If the POWER SELECT switch on the bottom of the unit is set to the Ⓑ position, turn the power on first, then set the clock

EN

MD Player

Listening to an MD

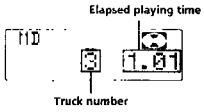
1 Press (OPEN) and insert an MD.
Playback starts automatically



2 Close the front panel.

If an MD is already inserted, press (SOURCE) repeatedly until "MD" appears.

The title of the MD* and the track title will be displayed on the display window, then the playing time will appear



** Only if these titles are prerecorded on the MD*

Tip
If the name of the MD is too long, you can scroll it across the display window by pressing (SHIFT), then press (2) (←) while the disc name or track name is displayed.

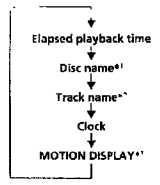
When the last track on the MD is over

The track number indication will return to "1," and the playback will restart from the first track of the MD

To	Press
Stop playback	(OFF)
Eject the MD	(OPEN) then ⏏

Changing the display item

Each time you press (DSPL), the item changes as follows



**1 If there is no prerecorded title for a disc "NO D.Name" will appear on the display.*
**2 If a track title is not prerecorded, "NO T Name" will be displayed.*
**3 All the items above are scrolled in the display one by one in order*

Automatically scrolling a disc name — Auto Scroll

If the disc name or track name on an MD exceeds 10 characters and the Auto Scroll function is on, automatically scrolls on the display as follows
- *The disc name appears when the disc has changed (if the disc name is selected).*
- *The track name appears when the track has changed (if the track name is selected)*
- *The disc or track name appears depending on the setting when you press (SOURCE) to select an MD.*

If you press (DSPL) to change the display item, the disc or track name of the MD is scrolled automatically whether you set the function on or off.

1 During playback, press (SHIFT).

2 Press (3) (SET UP) repeatedly until "A.Scrl" appears.

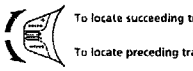
3 Press (5) (→) to select "A.Scrl on."

4 Press (SHIFT).

To cancel Auto Scroll, select "A Scrl off" in step 3 above

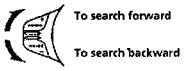
Locating a specific track — Automatic Music Sensor (AMS)

During playback, push the SEEK/AMS control up or down momentarily.



Locating a specific point in a track — Manual Search

During playback, push the SEEK/AMS control up or down and hold. Release when you have found the desired point.



Note
If "L L L L" or "ㄱ ㄱ ㄱ ㄱ" appears in the display, that means you have reached the beginning or the end of the disc and you cannot go any further.

EN

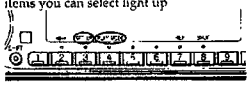
Getting Started/MD Player

Playing an MD in various modes

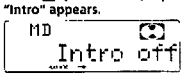
You can play MDs in various modes:
- Intro (Intro Scan) lets you play the first 10 seconds of all the tracks.
- Repeat (Repeat Play) repeats the current track.
- Shuf (Shuffle Play) plays all the tracks in random order.

Searching for the desired track — Intro Scan

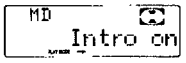
1 During playback, press SHIFT.
Every time you press SHIFT, only the items you can select light up.



2 Press 4 (PLAY MODE) repeatedly until "Intro" appears.



3 Press 5 (→) to select "Intro on."



Intro Scan starts.

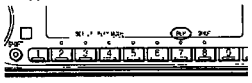
4 Press SHIFT.

To return to the normal playback mode, select "Intro off" in step 3 above.

Playing tracks repeatedly — Repeat Play

1 During playback, press SHIFT.

2 Press 7 (REP) repeatedly until "Repeat 1" appears.



Repeat Play starts.

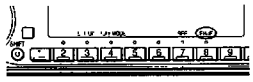
3 Press SHIFT.

To return to the normal playback mode, select "Repeat off" in step 2 above.

Playing tracks in random order — Shuffle Play

1 During playback, press SHIFT.

2 Press 8 (SHUF) repeatedly until "Shuf 1" appears.



Shuffle Play starts.

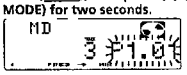
3 Press SHIFT.

To return to the normal playback mode, select "Shuf off" in step 2 above.

Creating a program — MD Program Memory

You can play the tracks in any order you want by creating and storing programs in the unit's memory. You can make two programs: Program 1 and Program 2. You can select up to 12 tracks for each program. You can store the programs in memory.

1 Press SHIFT, then press 4 (PLAY MODE) for two seconds.

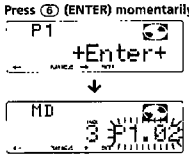


"P 1" indicates Program 1 is selected.

To select Program 2, press 5 (→) repeatedly until "P 2" appears.

2 Push the SEEK/AMS control up or down to select the track you want.

3 Press 6 (ENTER) momentarily.



4 To continue entering tracks, repeat steps 2 and 3.

5 When you finish selecting tracks, press 4 (PLAY MODE) for two seconds.

6 Press SHIFT.

Notes
- *"*Wait*" appears in the display while the unit is reading the data.*
- *"*Mem Full*" appears in the display when you try to enter more than 12 tracks into a program.*

Playing the stored program

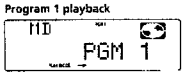
You can select:
- PGM 1 — to play Program 1
- PGM 2 — to play Program 2.
- PGM 1+2 — to play Programs 1 and 2

1 Press SHIFT.

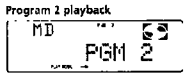
2 Press 4 (PLAY MODE) repeatedly until "PGM" appears.

3 Press 5 (→) repeatedly until the desired program appears.

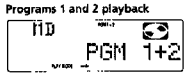
Program 1 playback



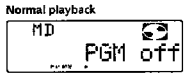
Program 2 playback



Programs 1 and 2 playback



Normal playback



Program Play starts.

4 Press SHIFT.

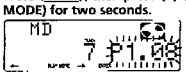
To return to normal playback mode, select "PGM off" in step 3 above.

Notes
- *"No data" appears in the display if no track is stored in the program.*
- *"Not ready" appears in the display if a disc that has no programed tracks is inserted.*

continue to next page →

Erasing an entire program

1 Press SHIFT, then press 4 (PLAY MODE) for two seconds.

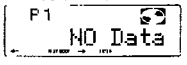


"P 1" indicates Program 1 is selected.

2 Press 7 (←) repeatedly until "DEL" appears.

To delete Program 2, press 5 (→) repeatedly until "PGM 2" appears.

3 Press 6 (ENTER) for two seconds.



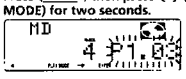
The entire program is erased.

4 When you finish erasing programs, press 4 (PLAY MODE) for two seconds.

5 Press SHIFT.

Adding tracks to a program

1 Press SHIFT, then press 4 (PLAY MODE) for two seconds.

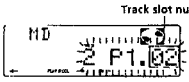


"P 1" indicates Program 1 is selected.

To select Program 2, press 5 (→) repeatedly until "P 2" appears.

2 Press 2 (←) or 5 (→) to select the track slot number where you want to insert a track.

Track slot number



3 Push the SEEK/AMS control up or down to select the track you want to insert.

4 Press 6 (ENTER) momentarily to enter the track.
The current track is inserted in that slot number and the succeeding tracks shift down.

5 To continue inserting tracks, repeat steps 2 through 4.

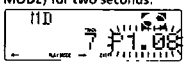
Note
*Once all 12 slots have been filled, "*Mem Full*" appears in the display, and you cannot insert more tracks.*

6 When you finish inserting tracks, press 4 (PLAY MODE) for two seconds.

7 Press SHIFT.

Erasing tracks in a program

1 Press SHIFT, then press 4 (PLAY MODE) for two seconds.

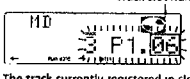


"P 1" indicates Program 1 is selected.

To select Program 2, press 5 (→) repeatedly until "P 2" appears.

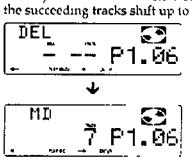
2 Press 7 (←) or 5 (→) to select the track you want to erase.

Track slot number



The track currently registered in slot 6 of Program 1.

3 Press 6 (ENTER) for two seconds.
When you erase a track from a slot number, the succeeding tracks shift up to fill the gap.



4 To continue erasing tracks, repeat steps 2 and 3.

5 When you finish erasing tracks, press 4 (PLAY MODE) for two seconds.

6 Press SHIFT.

Radio

Memorizing stations automatically — Best Tuning Memory (BTM)

The unit selects the stations with the strongest signals and memorizes them in the order of their frequencies. You can store up to 10 stations on each band (FM1, FM2, and AM).

Caution
When tuning in stations while driving, use Best Tuning Memory to prevent accidents.

1 Press SOURCE repeatedly to select the tuner.
Each time you press SOURCE, the source changes as follows:
MD ↔ TUNER

2 Press MODE repeatedly to select the band.
Each time you press MODE, the band changes as follows:
FM1 → FM2 → AM

3 Press SHIFT, then press 4 (PLAY MODE) repeatedly until "B.T.M" appears.

4 Press 8 (→).
The unit stores stations in the order of their frequencies on the number buttons.
A beep sounds when the setting is stored.

5 Press SHIFT.

Notes
- *The unit does not store stations with weak signals. If only a few stations are received, some number buttons will retain their former setting.*
- *When a number is indicated in the display, the unit starts storing stations from the one currently displayed.*

Memorizing only the desired stations

You can preset up to 20 FM stations (10 for FM1 and 10 for FM2) and up to 10 AM stations in the order of your choice.

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band (FM1, FM2, or AM).

3 Push the SEEK/AMS control up or down to tune in the station you want to store on the number button.

4 Press and hold the desired number button ((1) to (10)) until "MEM" appears.
The number button indication appears in the display.

Note
If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band (FM1, FM2, or AM).

3 Press the number button ((1) to (10)) momentarily where the desired station is stored.

If you cannot tune in a preset station

Push the SEEK/AMS control up or down momentarily to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Push the SEEK/AMS control up or down repeatedly until the desired station is received.

Note
If the automatic tuning stops too frequently, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Local" (local seek mode) is displayed. Then press (5) (→) to select "Local on." Press (S.MF). Only the stations with relatively strong signals will be tuned in.

Tip
If you know the frequency of the station you want to listen to, push the SEEK/AMS control up or down and hold until the desired frequency appears (manual tuning).

If FM stereo reception is poor — Monaural Mode

1 Press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Mono" appears.

2 Press (5) (→) repeatedly until "Mono on" appears.
The sound improves, but becomes monaural ("ST" disappears).

3 Press (SHIFT).

To return to normal mode, select "Mono off" in step 2 above.

If interference occurs during FM reception

If there is interference from neighboring stations, follow the steps below and select "Narrow." If interference is not a problem, select "Wide" to maximize signal reception and improve sound quality or "IF Auto" to switch between "Narrow" and "Wide" automatically.

1 Press (SHIFT) during FM reception.

2 Press (4) (PLAY MODE) repeatedly until "IF Auto" appears.

3 Press (5) (→) repeatedly to select desired setting.

IF Auto → Wide → Narrow → IF Auto

4 Press (SHIFT).

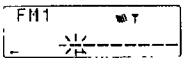
Storing the station names — Station Memo

You can assign a name to each radio station and store it in memory. The name of the station currently tuned in appears in the display. You can store up to eight characters for a station.

Storing the station names

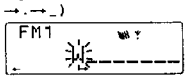
1 Tune in a station whose name you want to store.

2 Press (LIST) for two seconds.



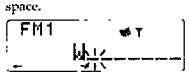
3 Enter the characters.

❶ Rotate the dial clockwise to select the desired characters.
(A → B → C → ... Z → 0 → 1 → 2 → ... 9 → + → − → * → / → \ → > → < → . → _)



If you rotate the dial counterclockwise, the characters appear in the reverse order.
If you want to put a blank space between characters, select "_" (underbar).

❷ Press (5) (→) after locating the desired character.
The flashing cursor moves to the next space.



If you press (2) (←), the flashing cursor moves to the left.

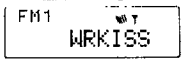
❸ Repeat steps ❶ and ❷ to enter the entire name.

4 To return to the normal radio reception, press (LIST) for two seconds.

Tip
To erase or correct a name, enter "_" (under bar) for each character.

Displaying the station name

Press (DSPL) during radio reception.



Each time you press (DSPL), the item changes as follows:

Station name* → Frequency → Clock → MOTION DISPLAY** → Station name*

** If the station name of a station is not stored, "NO Name" appears in the display for one second.*
*** All the items above are scrolled in the display one by one in order.*

Erasing the station name

1 Tune in any station and press (LIST) for two seconds.

2 Press (DSPL) for two seconds.
The station name appears in the display.

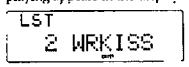
3 Rotate the dial to select the name that you want to erase.

4 Press (6) (ENTER) for two seconds.
The name is erased.
Repeat steps 3 and 4 if you want to erase other names.

5 Press (LIST) for two seconds.
The unit returns to the normal radio reception mode.

Locating a station by name — List-up

1 Press (LIST) momentarily.
The name assigned to the station currently playing appears in the display.



2 Press (LIST) repeatedly until you find the desired station.

3 Press (6) (ENTER) to tune in the desired station.

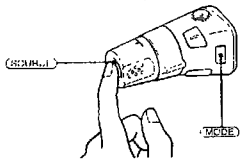
Note
Once the station name or frequency has been displayed for five seconds, the display goes back to its normal mode. To turn off the display, press (DSPL).

Other Functions

Using the rotary commander

The rotary commander works by pressing buttons and/or rotating controls.
You can control an optional CD or MD unit with the rotary commander.

By pressing buttons (the SOURCE and MODE buttons)



Each time you press (SOURCE), the source changes as follows:
TV* → TUNER → CD → MD

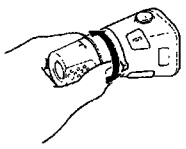
** When an optional TV tuner or video is connected.*

Pressing (MODE) changes the operation in the following ways;

- Tuner : FM1 → FM2 → AM
- CD unit : CD1 → CD2 → ...
- MD unit : MD1 → MD2 → ...
- TV/Video : TV → VIDEO1 → VIDEO2 → ...

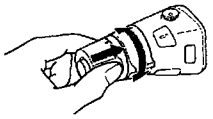
Tip
When the POWER SELECT switch is set to position ❶, you can turn on this unit by pressing (SOURCE) on the rotary commander.

By rotating the control (the SEEK/AMS control)



Rotate the control momentarily and release it to:
- Locate a specific track on a disc. Rotate and hold the control until you locate the specific point in a track, then release it to start playback.
- Tune in stations automatically. Rotate and hold the control to tune in a specific station.

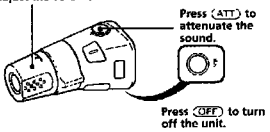
By pushing in and rotating the control (the PRESET/DISC control)

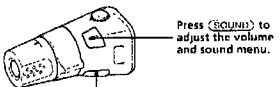


Push in and rotate the control to:
- Receive the stations memorized on the number buttons.
- Change the disc.

Other operations

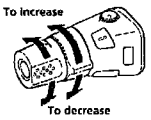
Rotate the VOL control to adjust the volume.



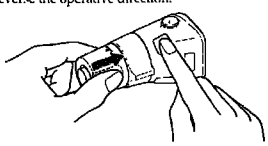


Changing the operative direction

The operative direction of controls is factory-set as in the illustration below.



If you need to mount the rotary commander on the right side of the steering column, you can reverse the operative direction.



Press (SOUND) for two seconds while pushing the VOL control.

Tip
You can control the operative direction of controls with the unit (page 18).

Adjusting the sound characteristics

You can adjust the bass, treble, balance and fader.
You can store the bass and treble levels independently for each source.

1 Select the item you want to adjust by pressing (SOUND) repeatedly.

VOL (volume) → SUB (subwoofer volume) → BAS (bass) → TRE (treble) → BAL (left-right) → FAD (rear-front)

2 Adjust the selected item by rotating the dial.

Adjust within three seconds after selecting the item. (After three seconds, the dial function reverts to volume control.)

EN

Attenuating the sound

Press (ATT) on the rotary commander or optional wireless remote.
"ATT on" flashes momentarily.

To restore the previous volume level, press (ATT) again.

Tip
The unit decreases the volume automatically when a telephone call comes in (Telephone ATT function).

Changing the sound and display settings

The follow items can be set:
- Clock (page 7)
- D Info (Dual Information) — to display the clock and the play mode at the same time (ON) or to display the information alternately (OFF)
- Amber/Green — to change the illumination color to amber or green.
- Dimmer — to change the brightness of the display.
  - Select "Auto" to dim the display only when you turn the lights on.
  - Select "on" to dim the display.
  - Select "off" to deactivate Dimmer.
- Contrast — to adjust the contrast if the indications in the display are not recognizable because of the unit's installed position.
- Voice guide function for vocalized comments.
  - Select "Voice 1" to minimize the volume of the guide.
  - Select "Voice 2" to be louder the volume than "Voice 1."
  - Select "Voice 3" to maximize the volume of the guide.
  - Select "Voice off" to deactivate Voice guide.
- Beep — to turn on or off the beeps.
- RM (Rotary Commander) — to change the operative direction of the control's of the rotary commander.
  - Select "norm" to use the rotary commander as the factory set position.
  - Select "rev" when you mount the rotary commander on the right side of the steering column.
- BBE — to enjoy bass and treble even at low volume. The bass and treble will be reinforced.
  - Select "BBE 1" to reinforce the bass and treble.
  - Select "BBE 2" to reinforce the bass and treble more effective than "BBE 1."
  - Select "BBE off" to deactivate BBE.
- LPF (Low Pass Filter) (page 19)
- A.Scrl (Auto Scroll) (page 9, 20)

1 Press (SHIFT).

2 Press (3) (SET UP) repeatedly until the desired item appears.

Each time you press (3) (SET UP), the item changes as follows:

Clock → D Info* → Amber/Green → Dimmer → Contrast → Voice* → Beep → RM → BBE* → LPF* → A.Scrl*

* *When the radio is off, or when there is no CD, or MD being played, these items will not appear.*

Notes
- *The displayed item will differ depending on the source.*
- *If an optional digital preamplifier is connected to the unit, BBE and Voice Guide do not work.*

3 Press (5) (→) to select the desired setting (for example: on or off).
For the "Contrast" setting, pressing (5) (→) makes the contrast higher, and pressing (2) (←) makes the contrast lower.

4 Press (SHIFT).
After the mode setting is complete, the display returns to the normal playback mode.

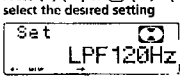
Adjusting the frequency of the subwoofer(s)

To match the characteristics of the connected subwoofer(s), you can cut out the unwanted high and middle frequency signals entering the subwoofer(s). By setting the cut-off frequency, the subwoofer(s) will output only low frequency signals for a clearer sound image.

1 Press (SOURCE) to select a source (radio, CD, or MD).

2 Press (SHIFT), then press (3) (SET UP) repeatedly until "LPF" appears.

3 Press (5) (→) or (2) (←) repeatedly to select the desired setting.



Each time you press (5) (→) or (2) (←), the cut off frequency in the display changes as follows.

LPF off ⇄ LPF 80 Hz ⇄ LPF 120 Hz

4 Press (SHIFT).
When the frequency setting is complete, the display returns to the normal playback mode.

EN

Other Functions

With Optional Equipment

CD/MD Unit

You can control up to 7 CD and MD units with this unit.
If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play back a CD TEXT disc.

Playing a CD or MD

1 Press (SOURCE) repeatedly to select the CD or MD.

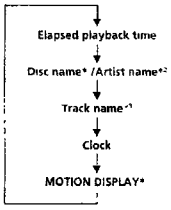
2 Press (MODE) until the desired unit appears.
CD / MD playback starts.

EN

When a CD / MD unit is connected, all the tracks play from the beginning.

Changing the display item

Each time you press (DSPL) during CD, CD TEXT, or MD playback, the item changes as follows:



*1 *If you have not labeled the disc or if there is no disc name prerecorded on the MD, "NO D.Name" appears in the display.*
*2 *If you play a CD TEXT disc, the artist name appears in the display after the disc name. (Only for CD TEXT discs with the artist name.)*
*3 *If the track name of a CD TEXT disc or MD is not prerecorded, "NO T.Name" appears in the display.*
*4 *All the items above are scrolled in the display one by one in order.*

You can label CD and CD TEXT discs with a personalized name using the disc memo function, refer to "Labeling a CD" (page 24). However, if you use personalized labels, they will always take priority over the original CD TEXT information when such information is displayed.

Tips
- *If the name of the MD or CD TEXT disc is too long, you can scroll it across the display by pressing (SHIFT), then (7) (←).*
- *If you want to display the original CD TEXT information after labeling the CD TEXT disc with a personalized name, press (SHIFT), then (5) (→).*

Automatically scrolling a disc name — Auto Scroll

If the disc name / artist name or track name on a CD TEXT disc or MD exceeds 10 characters and the Auto Scroll function is on, automatically scrolls on the display as follows.
- *The disc name appears when the disc has changed (if the disc name is selected).*
- *The track name appears when the track has changed (if the track name is selected).*

If you press (DSPL) to change the display item, the disc or track name of the MD or CD TEXT disc is scrolled automatically whether you set the function on or off.

1 During playback, press (SHIFT).

2 Press (3) (SET UP) repeatedly until "A.Scrl" appears.

3 Press (5) (→) to select "A.Scrl on."

4 Press (SHIFT).

To cancel Auto Scroll, select "A.Scrl off" in step 2 above.

Note
For some CD TEXT discs with a lot of characters, the following cases may happen.
— Some of the characters are not displayed.
— Auto Scroll does not work.

Locating a specific track — Automatic Music Sensor (AMS)

During playback, push the SEEK/AMS control up or down once for each track you want to skip.

To locate succeeding tracks

To locate preceding tracks

Locating a specific point in a track — Manual Search

During playback, push the SEEK/AMS control up or down and hold. Release when you have found the desired point.

To search forward

To search backward

Locating a disc by disc number — Direct Disc Selection

Press the number button that corresponds with the desired disc number.
The desired disc in the current changer begins playback.

Scanning the tracks — Intro Scan

You can play the first 10 seconds of all the tracks on the current disc.

1 During playback, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Intro" appears.

2 Press (5) (→) to select "Intro on."
Intro Scan starts.

3 Press (SHIFT).

To return to the normal playback mode, select "Intro off" in step 2 above.

Playing tracks repeatedly — Repeat Play

You can select:
- Repeat 1 — to repeat a track.
- Repeat 2 — to repeat a disc.

1 During playback, press (SHIFT).

2 Press (7) (REP) repeatedly until the desired setting appears.

Repeat 1 → Repeat 2 → Repeat off →

Repeat Play starts.

3 Press (SHIFT).

To return to the normal playback mode, select "Repeat off" in step 2 above.

EN

CD/MD Unit

Playing tracks in random order — Shuffle Play

You can select:
- Shuf 1 — to play the tracks on the current disc in random order.
- Shuf All — to play all the tracks in random order.

1 During playback, press (SHIFT).

2 Press (8) (SHUF) repeatedly until the desired setting appears.

Shuf 1 → Shuf All → Shuf off →

Shuffle Play starts.

3 Press (SHIFT).

To return to the normal playback mode, select "Shuf off" in step 2 above.

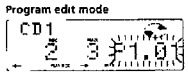
Creating a program

— Program Memory (CD/MD unit with the program memory function)

You can play tracks in any order you want by creating and storing programs in the unit's memory. You can make two programs, Program 1 and Program 2. You can select up to 12 tracks for each program. You can store the programs in memory.

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.

Program edit mode



"P 1" indicates Program 1 is selected.

If you have labeled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P 1" above.

To select Program 2, press (5) (→) repeatedly until "P 2" appears.

2 Select the track you want.

❶ Press (SOURCE) repeatedly to select CD or MD.

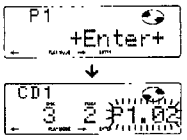
❷ Press (MODE) repeatedly to select the unit.

❸ Press (SHIFT), then press the number button to select the disc.

❹ Press (SHIFT).

❺ Push the SEEK/AMS control up or down to select the track.

3 Press (6) (ENTER) momentarily.



4 To continue entering tracks, repeat steps 2 and 3.

5 When you finish entering tracks, press (4) (PLAY MODE) for two seconds.

6 Press (SHIFT).

Notes

- *"**Wait**" appears in the display while the unit is reading the data, or if a disc has not been put into the unit.*
- *"Mem Full" appears in the display when you try to enter more than 12 tracks into a program.*

Playing the stored program

Changing the disc order in the unit will not affect program memory play.

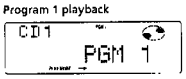
You can select
- PGM 1 — to play Program 1
- PGM 2 — to play Program 2
- PGM 1-2 — to play Programs 1 and 2

1 Press (SHIFT).

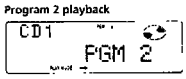
2 Press (4) (PLAY MODE) repeatedly until "PGM" appears.

3 Press (5) (→) repeatedly until the desired program appears.

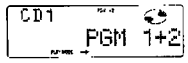
Program 1 playback



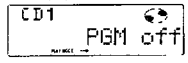
Program 2 playback



Programs 1 and 2 playback



Normal playback



Program Play starts.

4 Press (SHIFT).

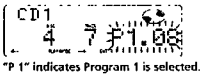
To return to the normal playback mode, select "PGM off" in step 3 above.

Notes

- *If you press a number button during program memory play, program memory play is interrupted, and playback of the selected disc starts.*
- *"NO Data" appears in the display if no track is stored in the program.*
- *If a track stored into the program memory is not in the disc magazine, the track will be skipped.*
- *When the disc magazine contains no tracks stored into the program memory, or when the program information has not been loaded yet, "Not ready" appears.*

Erasing an entire program

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.



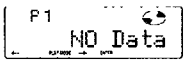
"P 1" indicates Program 1 is selected.

If you have labeled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P 1" above.

2 Press (2) (←) repeatedly until "DEL" appears.

To erase Program 2, press (5) (→) repeatedly until "PGM 2" appears.

3 Press (6) (ENTER) for two seconds.



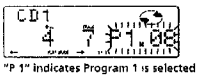
The entire program is erased.

4 When you finish erasing programs, press (4) (PLAY MODE) for two seconds.

5 Press (SHIFT).

Adding tracks to a program

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.



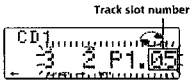
"P 1" indicates Program 1 is selected.

If you have labeled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P 1" above.

To select Program 2, press (5) (→) repeatedly until "P 2" appears.

2 Press (2) (←) or (5) (→) to select the track slot number where you want to insert a track.

Track slot number



3 Push the SEEK/AMS control up or down to select the track you want to insert.

4 Press (6) (ENTER) momentarily to enter the track.
The current track is inserted in that slot number and the succeeding tracks shift down.
To continue inserting tracks, repeat steps 2 through 4.

Note

Once all 12 slots have been filled, "Mem Full" appears in the display, and you cannot insert more tracks.

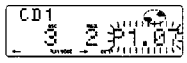
5 When you finish inserting tracks, press (4) (PLAY MODE) for two seconds.

6 Press (SHIFT).

continue to next page →

Erasing tracks in a program

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.



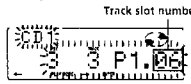
"P 1" indicates Program 1 is selected.

If you have labeled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P 1" above.

To select Program 2, press (5) (→) repeatedly until "P 2" appears.

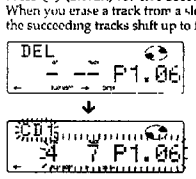
2 Press (2) (←) or (3) (→) to select the track you want to erase.

Track slot number



The track currently registered in slot 6 of Program 1.

3 Press (6) (ENTER) for two seconds.
When you erase a track from a slot number, the succeeding tracks shift up to fill the gap.



4 To continue erasing tracks, repeat steps 2 and 3.

5 When you finish erasing tracks, press (4) (PLAY MODE) for two seconds.

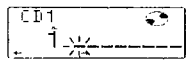
6 Press (SHIFT).

Labeling a CD — Disc Memo

(CD unit with the custom file function)

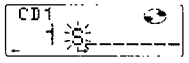
You can label each disc with a personalized name. You can enter up to eight characters for a disc. If you label a CD, you can locate the disc by name (page 26) and select the specific tracks for playback (page 26).

1 Play the CD and press (LIST) for two seconds.



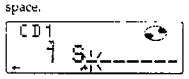
2 Enter the characters.

❶ Rotate the dial clockwise to select the desired characters.
(A → B → C → ··· Z → 0 → 1 → 2 → ··· 9 → + → - → * → / → \ → > → < → → _)



If you rotate the dial counterclockwise, the characters appear in the reverse order.
If you want to put a blank space between characters, select "_" (underbar).

❷ Press (5) (→) after locating the desired character.
The flashing cursor moves to the next space.



If you press (2) (←), the flashing cursor moves to the left.

❸ Repeat steps ❶ and ❷ to enter the entire name.

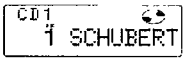
3 To return to the normal CD playback mode, press (LIST) for two seconds.

Tip

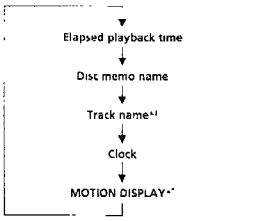
To erase or correct a name enter "_" (under-bar) for each character.

Displaying the disc memo name

Press (DSPL) during CD or CD TEXT disc playback.



Each time you press (DSPL) during CD or CD TEXT playback, the item changes as follows.



1 If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you playback a CD TEXT disc.

2 All the items above are scrolled in the display one by one in order.

Erasing the disc memo

1 Press (SOURCE) repeatedly to select CD.

2 Press (MODE) repeatedly to select the CD unit.

3 Press (LIST) for two seconds.

4 Press (DSPL) for two seconds.

5 Rotate the dial to select the name you want to erase.

6 Press (6) (ENTER) for two seconds.
The name is erased.
Repeat steps 5 and 6 if you want to erase other names.

7 Press (LIST) for two seconds.
The unit returns to the normal CD play back mode.

Note

When the personalized label is erased, the original CD TEXT information will appear in the display.

Locating a disc by name

— List-up (CD unit with the custom file function or MD unit)

You can use this function for discs that have been assigned a custom name. For more information on disc names, refer to "Labeling a CD" (page 24).

1 **Press (LIST) momentarily.**
The name assigned to the current disc appears in the display.

When you assign a disc memo label to a CD TEXT disc, it takes priority over the original CD TEXT information

2 **Press (LIST) repeatedly until you find the desired disc.**

3 **Press (6) (ENTER) to play back the disc.**

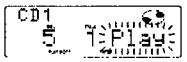
Notes
- *After a disc name has been displayed for five seconds, the display goes back to normal playback mode. To turn off the display, press (DSPL).*
- *The track names are not displayed during MD or CD TEXT disc playback.*
- *If there are no discs in the magazine, "NO Disc" appears in the display.*
- *If a disc has not been assigned a custom file, "********" appears in the display.*
- *If the disc information has not been read by the unit, "?" appears in the display. To load a disc, first press the number button, then choose the disc that has not been loaded.*
- *The information appears only in upper case. There are also some letters which cannot be displayed (during MD or CD TEXT disc playback).*

Selecting specific tracks for playback

— Bank
(CD unit with the custom file function)

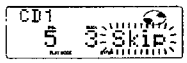
If you label the disc, you can set the unit to skip tracks and play only the tracks you want

1 **Start playing the disc and press (SHIFT). Then press (4) (PLAY MODE) for two seconds.**
Bank edit mode



Note
If you have not labeled the disc, the bank edit mode does not appear and the program edit mode appears. To return to the normal playback mode, press (4) (PLAY MODE) for two seconds.

2 **Push the SEEK/AMS control up or down to select the track number you want to skip and press (6) (ENTER).**



The indication changes from "Play" to "Skip." To return the indication to "Play," press (6) (ENTER) again.

3 **Repeat step 2 to set "Play" or "Skip" mode for all the tracks.**

4 **Press (4) (PLAY MODE) for two seconds.**
The unit returns to the normal CD playback mode.

5 **Press (SHIFT).**

Notes
- *You can set the "Play" and "Skip" mode for up to 24 tracks.*
- *You cannot set the "Skip" mode for all the tracks.*

Playing the specific tracks only

You can select.
- Bank on — to play the tracks with the "Play" setting.
- Bank inv (inverse) — to play the tracks with the "Skip" setting.

1 **During playback, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Bank" appears.**

2 **Press (5) (→) repeatedly until the desired setting appears.**

→ Bank on → Bank inv → Bank off

Playback starts from the track following the current one

3 **Press (SHIFT).**

To return to the normal play mode, select "Bank off" in step 2 above

With Optional Equipment

DSP

The optional XDP-U50D lets you add some effects to the sound field of the currently selected source

The followings are the operating instructions for the XDP-U50D.
When the XDP-210EQ is connected to the unit, refer to the instructions manual supplied to the XDP-210EQ

Note
If you connect the optional digital preamplifier XDP-U50D/210EQ, the voice guide function will not work.

Selecting a surround menu

You can select a desired surround menu to best fit the audio source. The following menus can simulate different sound fields and enhance the sound so that you feel as if you are in a live concert.

Surround menu

HALL	Concert hall
JAZZ	Jazz club
DISCO	Disco with thick walls
THEATER	Movie theater
PARK	Big open space
LIVE	Live concert
OPERA	Opera house
CHURCH	Church/chapel with a lot of reverberation
STADIUM	Open-air concert in a stadium
CELLAR	Cellar with a lot of reverberation
DEFEAT	Normal sound without any DSP effects

continue to next page →

1 **Press (SOURCE) to select a source (tuner, CD, or MD).**

2 **Press (SOUND) repeatedly until "SUR" appears.**

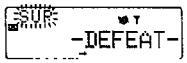
3 **Rotate the dial to select the desired surround menu.**
The surround menu appears in the order shown above.

After three seconds, the display returns to the normal playback mode.

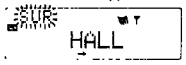
Adjusting the effect level

1 **Press (SOURCE) to select a source (tuner, CD, or MD).**

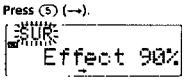
2 **Press (SOUND) for two seconds.**



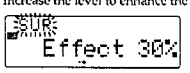
3 **Rotate the dial to select until the desired surround menu appears.**



4 **Press (5) (→).**



5 **Rotate the dial to adjust the level.**
You can adjust the level from 0 to 100%. Increase the level to enhance the effect



6 **Press (SOUND) for two seconds.**

Storing a surround effect onto the CDs

— Digital Signal Processor (DSP) Custom File (CD unit the with custom file function)

Once you have registered the desired surround menu onto the discs, you can enjoy the same surround menu every time you play them. (Only when you have labeled a disc by the Custom File function.)

1 **During CD playback, press (LIST) for two seconds.**

2 **Press (LIST) until the surround menu appears.**
DSP custom file mode

3 **Rotate the dial to select the desired surround menu.**

4 **Press (LIST) for two seconds.**
After the effect setting is complete, the display returns to the normal playback mode

Playing the disc with the stored surround menu

1 **Press (SHIFT), then press (3) (PLAY MODE) repeatedly until "D.File" appears.**

2 **Press (5) (→) to select "D.File on."**
After five seconds, the display returns to the normal playback mode

3 **Press (SHIFT).**

To cancel to play the disc with stored surround menu, select "D.File off" in step 2 above.

Changing the stored surround effect

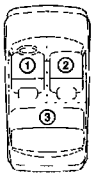
Play the disc whose surround mode you want to change, and follow the steps of "Storing the surround effect onto the CDs."

Erasing the stored surround effect

Select "DEFEAT" in step 3 of "Storing the surround effect onto the CDs."

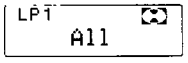
Selecting the listening position

You can set a delayed time for the sound to reach the listeners from the speakers.
In this way, the unit can simulate a natural sound field so that you feel as if you are in the center of the sound field no matter where you sit in the car.



Display window	Center of sound field
LP1 All	Normal setting (① + ② + ③)
LP2 Front	Front part (① + ②)
LP3 Front R	Right front (②)
LP4 Front L	Left front (①)
LP5 Rear	Rear part (③)

1 **Press (SOUND) momentarily until "LP1" appears.**



2 **Rotate the dial to select the desired listening position.**
The listening positions appear in the order shown above.

After three seconds, the display returns to the normal playback mode

Adjusting the listening position

1 **Press (SOUND) for two seconds.**

2 **Press (SOUND) repeatedly until the desired listening position appears.**

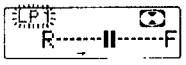
3 **Press (5) (→).**

4 **Rotate the dial to adjust the center of the sound field to the left or right. Then set the center of the sound field.**

Center moves to the L (left).

Center moves to the R (right).

5 **Press (5) (→).**



6 **Rotate the dial to adjust the center of the sound field to the front or rear.**

Center moves to the R (rear).

Center moves to the F (front).

7 **Press (SOUND) for two seconds.**
When the effect setting is complete, the normal playback mode appears.

Adjusting the fader (FAD)

Normally, with the DSP mode on, the volume of the output sound from the rear speakers is lowered automatically to improve the efficiency of the listening position setting. If you want to raise the rear speaker volume, adjust the fader.

1 Follow steps 1 to 3 of "Selecting a surround menu" (page 27).

2 Press SOUND repeatedly until "FAD" appears.

3 Rotate the dial to adjust the fader.

Decreases front speaker volume

Increases front speaker volume

After three seconds, the display returns to the normal playback mode

Adjusting the volume of the subwoofer(s)

1 Press SOURCE to select a source (tuner, CD, or MD).

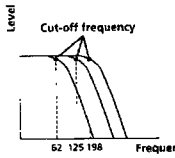
2 Press SOUND repeatedly until "SUB" appears.

3 Rotate the dial to adjust the volume.
After three seconds, the display returns to the normal playback mode.

Tip
When you rotate the dial to turn the volume all the way down, "Sub ATT" appears and the cutout frequency of the subwoofer is disabled.

Adjusting the frequency of the subwoofer(s)

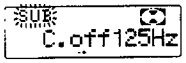
To match the characteristics of the connected subwoofer(s), you can cut out the unwanted high and middle frequency signals entering the subwoofer(s). By setting the cut-off frequency (see the diagram below), the subwoofer(s) will output only low frequency signals so you can get a clearer sound image.



1 Press SOURCE to select a source (tuner, CD, or MD).

2 Press SOUND for two seconds.

3 Press SOUND repeatedly until "SUB" appears.



4 Rotate the dial to select the desired cut-off frequency.
The cut-off frequency in the display changes as follows:

62 → 78 → 99 → 125* → 157 → 198 Hz

* Factory-set frequency

5 Press SOUND for two seconds.
After the frequency setting is complete, the display returns to the normal playback mode.

Tip
Each time you press 5 (→), the mode changes between subwoofer volume adjusting mode and the cut-off frequency adjusting mode.

Adjusting the volume of the bass and treble

You can adjust the volume of the bass and treble to best fit the acoustic characteristics inside your car.

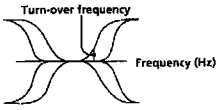
1 Press SOURCE to select a source (tuner, CD, or MD).

2 Press SOUND repeatedly until "BAS" or "TRE" appears.

3 Rotate the dial to adjust the volume.
After three seconds, the display returns to the normal playback mode.

Adjusting the turn-over frequency

You can adjust the bass and treble turn-over frequencies.

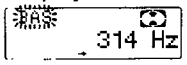


1 Press SOURCE to select a source (tuner, CD, or MD).

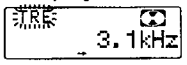
2 Press SOUND for two seconds.

3 Press SOUND repeatedly until "BAS" or "TRE" appears.

Bass adjusting mode



Treble adjusting mode



Tip
Each time you press 4 (→), the mode changes between the turn over frequency adjusting mode and the bass and treble volume adjusting mode.

4 Rotate the dial to select the turn-over frequency.
The turn-over frequencies change as follows:

Bass:
198 Hz → 250 Hz → 314 Hz* → 396 Hz

Treble:
2.0 kHz → 3.1 kHz* → 4.0 kHz → 5.0 kHz

* Factory-set frequency

5 Press SOUND for two seconds.
The display returns to the normal playback mode

Listening to each program source in its registered surround menu

— Last Sound Memory (LSM)

Each time you return to the same source, you can hear the same surround effect registered for that source, even after changing the program source or turning the unit off and then on again.

Changing the line output level

You can change the line output level if you hear distortion or other noise.

1 Press SHIFT, then press 3 (SET UP) until "L.out" appears.

2 Press 5 (→) to select the desired setting (–10 dB or –16 dB).

3 Press SHIFT.

With Optional Equipment

TV/Video

You can connect an optional TV tuner and TV monitor to this unit.

Watching the TV

1 Press SOURCE repeatedly until "TV" appears.

2 Push the SEEK/AMS control up or down to select the desired TV band.

Watching a video

1 Press SOURCE repeatedly until "TV" appears.

2 Press MODE repeatedly to select "Video 1."
Play back the video.

Note
"Video 2" appears if the VIDEO 2 terminal of the TV monitor is selected

Memorizing TV channels automatically

The unit selects the TV channels with the strongest signals and memorizes them in the order of their frequency.

Caution
When tuning in a station while driving, use Best Tuning Memory to prevent accidents.

1 Press SOURCE repeatedly until "TV" appears.

2 Press SHIFT, then press 4 (PLAY MODE) repeatedly until "Auto mem" appears.

3 Press 5 (→).
The unit stores TV channels in the order of their frequencies on the number buttons. A beep sound and the setting is stored.

4 Press SHIFT.

Notes
- *The unit does not store TV channels with weak signals. If only a few TV channels are received, some number buttons will remain empty.*
- *When a preset number is indicated in the display, the unit starts storing TV channels from the one currently displayed.*

Memorizing only the desired TV channels

You can store up to 10 channels on the number buttons in the order of your choice.

1 Press SOURCE repeatedly until "TV" appears.

2 Push the SEEK/AMS control up or down to tune in the TV program you want to store on the number button.

3 Keep the desired number button (1 to 10) pressed until you hear a beep tone.
The number button indication appears in the display.

Note
If you try to store another program on the same number button, the previously stored program will be erased

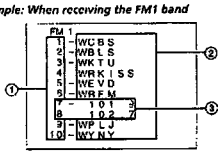
Storing the TV channel names

Follow the steps in "Storing the station names" (page 15).

Displaying the TV or radio station names

Press LIST momentarily during TV or radio reception.

Example: When receiving the FM1 band



① Preset number
② Stored station names
③ Frequencies*

* *If the name of a station is not stored, the frequency of that station will be displayed instead*

Notes
- *It may take some time before all indications appear in the display*
- *The TV program does not appear during list display.*
- *The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode.*

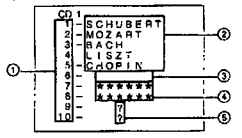
Turning off the display

During radio reception, press LIST again.
During TV reception, the list display on the TV monitor will automatically turn off after a few seconds.

Displaying the information stored on discs

Press LIST momentarily during CD/MD playback.

Example: When CD unit 1 is selected.



① Disc numbers
② Titles stored as custom files
③ No disc is loaded*1
④ No stored titles*2
⑤ TOC information has not been identified yet*3

*1 *A blank space is displayed next to a disc numbers representing empty slots in the disc magazine*
*2 *If a title is not registered in the custom file, "******" is displayed.*
*3 *If the disc information has not been read yet, "?" is displayed.*

Notes
- *It may take some time until all indications appear in the display*
- *The TV program does not appear during list display.*
- *The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode.*

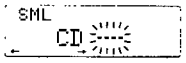
Turning off the display

Press LIST again.

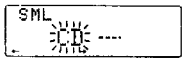
Watching the TV or video while listening to a CD or MD — Simultaneous Play

The simultaneous play function does not work while you are listening to the radio.

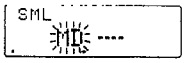
1 Press (SOURCE) for two seconds.



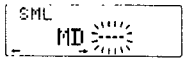
2 Press ② (◂).



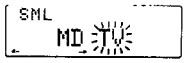
3 Press (SOURCE) repeatedly to select a CD or MD.



4 Press ⑤ (⟶)



5 Press (SOURCE) repeatedly to select a TV or video.



6 Press (SOURCE) for two seconds.
Simultaneous Play starts.

If you are already watching the TV or video and want to listen to a CD or MD, follow the same above steps except press ⑤ (⟶) in step 2 and press ② (◂ ·) in step 4

Returning to normal mode

To cancel the CD or MD, follow the steps above and select "– –" in step 3

To cancel the TV or video, follow the steps above and select "– –" in step 5.

Notes

If you press the EJECT button on a CD/MD unit while the unit is in simultaneous play mode, Simultaneous Play is canceled.

EN

Additional Information

Precautions

- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the fader control to the center position.
- If your car is equipped with a power antenna, it will extend automatically while the unit is operating.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer

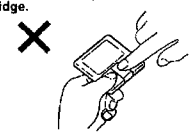
Moisture Condensation

On a rainy day or in a very damp area, moisture may condense on the lenses inside the MD player. Should this occur, the unit will not operate properly. In this case, remove the disc and wait for about an hour until the moisture evaporates.

Notes on MDs

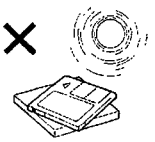
Since an MD itself is housed in a cartridge, free from accidental contact with your fingers and dust etc., it can withstand a certain degree of the rough handling. However, dirt or dust on the surface of the cartridge or a warped cartridge may cause a malfunction or quality, observe the following.

Never touch the surface of the MD itself by deliberately opening the shutter on the cartridge.



Do not expose the MD to direct sunlight or heat sources such as hot air-ducts. Do not leave it in a car parked in the direct sunlight where there can be a considerable rise in temperature.

Make sure that it is not left on the dashboard or rear tray of a car etc. where the temperature can also be excessive.



Notes on mounting labels

Be sure to mount labels on cartridges correctly, as failing to do so may cause an MD to become stuck in the unit

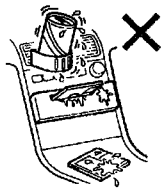
- Mount the label in a suitable position.
- Remove old labels before putting new ones on
- Replace labels that are beginning to peel away from the MD.

EN

TV/Video/Additional Information

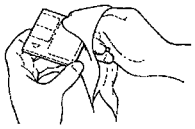
Note on using MDs

If you have drink holders near your audio equipment, be careful not to splash juice or other soft drinks onto the car audio and MDs. Sugary residues spilt on this unit or on the MDs may contaminate the unit and MDs, reduce the sound quality, or prevent sound reproduction altogether



Cleaning

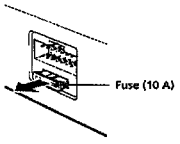
Wipe the surface of the MD cartridge from time to time with a soft dry cloth.



Maintenance

Fuse Replacement

When replacing the fuse, be sure to use one matching the amperage rating stated on the original fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer

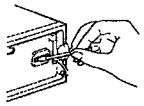


Warning

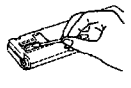
Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing (OPEN), then detach it and clean the connectors with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connectors may be damaged.



Main unit



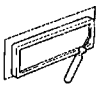
Back of the front panel

Notes

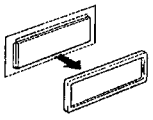
- *For safety, before cleaning the connectors, turn off the engine and remove the key from the ignition switch.*
- *Never touch the connectors directory with your fingers or any metal device.*

Dismounting the unit

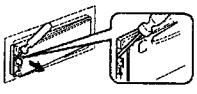
1 Press the clip inside the front cover with a thin screwdriver, and gently pry the front cover free.



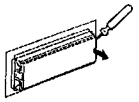
2 Repeat step 1 on the left side.
The front cover is removed



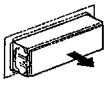
3 Use a thin screwdriver to push in the clip on the left side of the unit, then pull out the left side of the unit until the catch clears the mounting.



4 Repeat step 3 on the right side.



5 Slide the unit out of the mounting.



EN

Additional Information

Installation (US)

Precautions

- Do not tamper with the four holes on the upper surface of the unit. They are for tuner adjustments to be made only by service technicians.
- Choose the installation location carefully so that the unit will not interfere with the driver while driving.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight or hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 20°.

How to Detach and Attach the Front Panel

Before installing the unit, detach the front panel.

To detach A

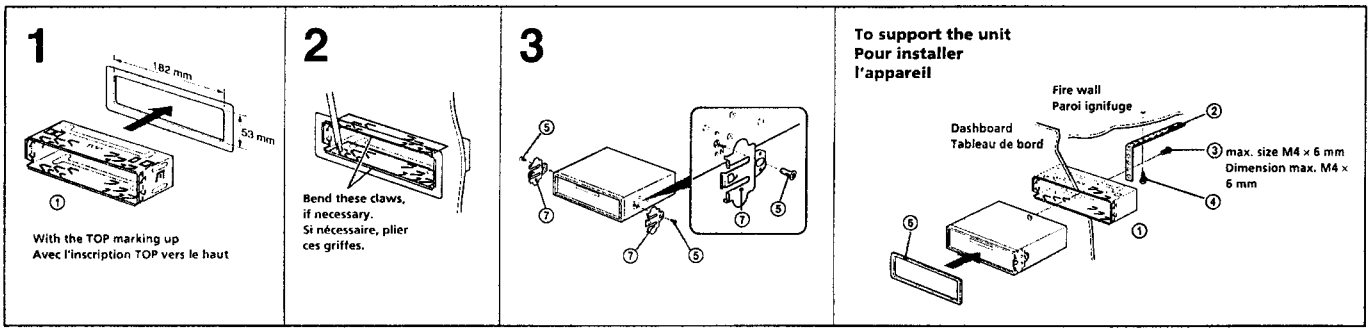
Before detaching the front panel, be sure to press (OFF) first. Then press (OPEN) to open the front panel, then slide the front panel to the right side, and pull out the left side of the front panel.

To attach B

Place the hole ⓐ in the front panel onto the spindle ⓑ on the unit as illustrated, then push the left side in.

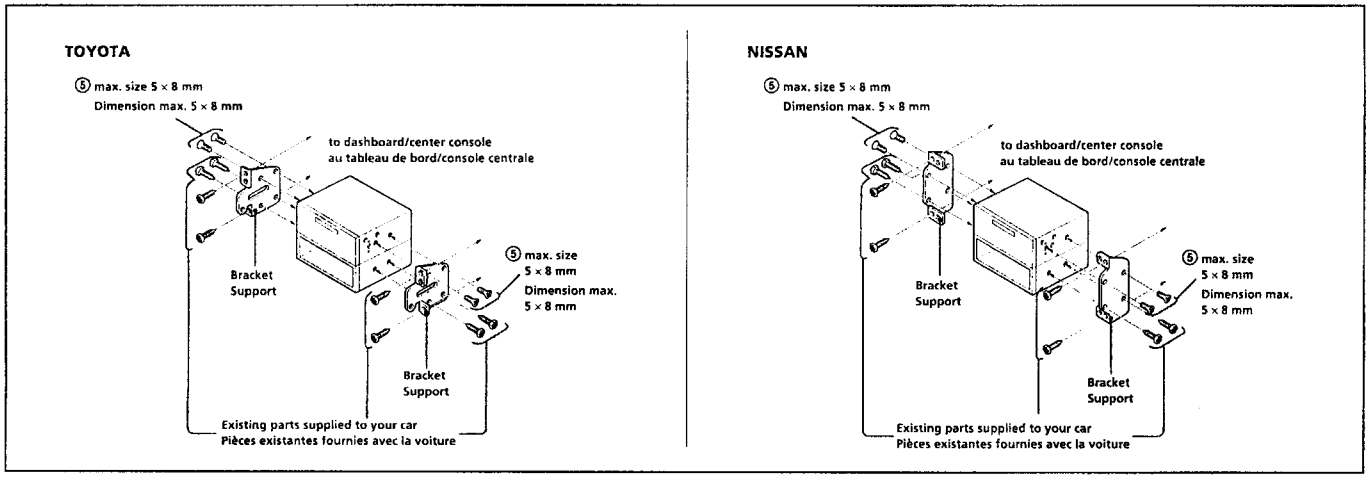
Mounting Example

Installation in the dashboard



Mounting the Unit in a Japanese Car

You may not be able to install this unit in some makes of Japanese cars. In such a case, consult your Sony dealer.



Note
To prevent malfunction, install only with the supplied screws ⑤.

Installation

Précautions

- Ne pas toucher les quatre orifices sur le panneau supérieur de l'appareil. Ils servent aux réglages du tuner qui ne doivent être effectués que par un technicien.
- Choisir soigneusement l'emplacement de l'installation, pour que l'appareil ne gêne pas la conduite.
- Eviter d'installer l'appareil dans un endroit exposé à des températures élevées, comme en plein soleil ou à proximité d'une bouche d'air chaud, ou à de la poussière, de la saleté ou des vibrations violentes.
- Pour garantir un montage sûr, n'utiliser que le matériel fourni.

Réglage de l'angle de montage

Ajuster l'inclinaison à un angle inférieur à 20°.

Retrait et pose du panneau avant

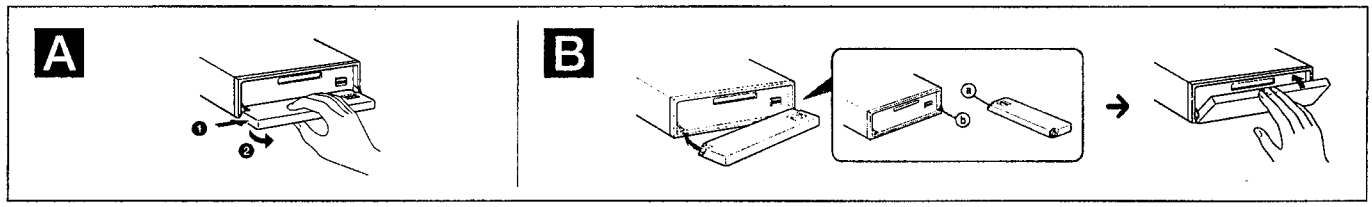
Avant d'installer l'appareil, déposer la panneau avant.

Retrait A

Avant d'ôter la façade, veiller à appuyer d'abord sur (OFF). Ensuite, appuyer sur (OPEN) pour ouvrir la façade et faire glisser la façade vers la droite. Tirer enfin sur la gauche de la façade.

Pose B

Introduire l'orifice ⓐ de la façade dans le pivot ⓑ de l'appareil comme illustré, puis enfoncer la partie gauche.



Exemple de montage

Installation dans le tableau de bord

Installation de l'appareil dans une voiture japonaise

Si vous ne pouvez pas installer l'appareil dans une voiture japonaise, consultez votre revendeur Sony.

Remarque
Pour éviter tout dysfonctionnement, utilisez uniquement les vis de montage fournies ⑤.

Installation (E)

Precautions

- Do not tamper with the four holes on the upper surface of the unit. They are for tuner adjustments to be done only by service technicians.
- Choose the installation location carefully so that the unit will not hamper the driver during driving.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight or hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 20°.

How to detach and attach the front panel

Before installing the unit, detach the front panel.

A To detach

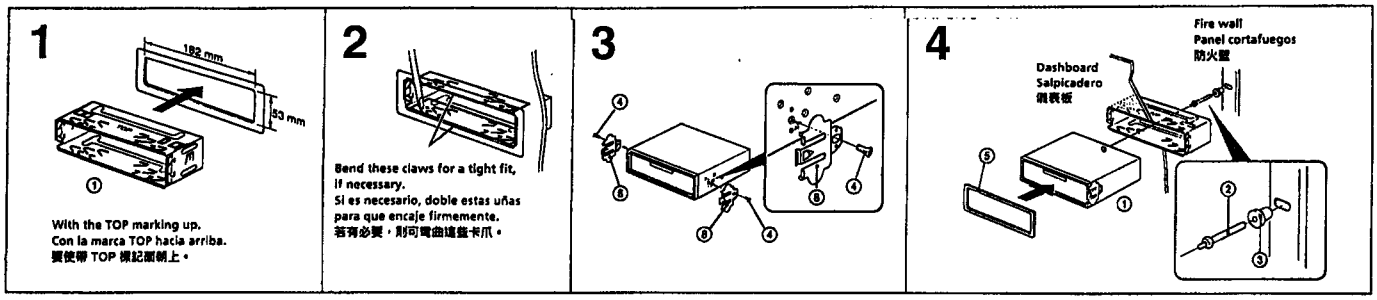
Before detaching the front panel, be sure to press (OFF) first. Then press (OPEN) to open the front panel, then slide the front panel to the right side, and pull out the left side of the front panel.

B To attach

Place the hole ⓐ in the front panel onto the spindle ⓑ on the unit as illustrated, then push the left side in.

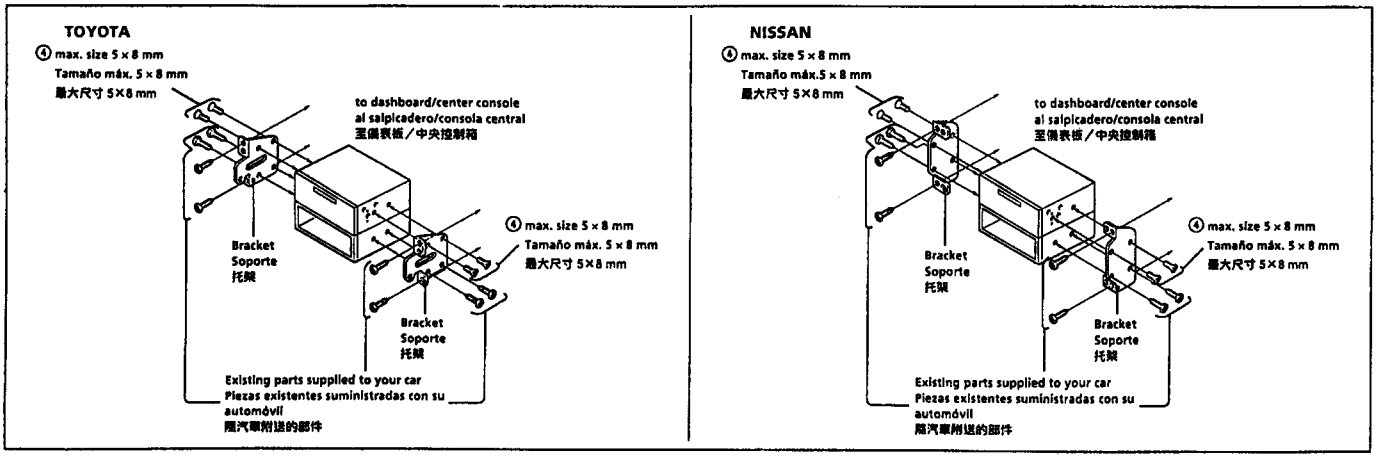
Mounting example

Installation in the dashboard



Mounting the unit in a Japanese car

You may not be able to install this unit in some makes of Japanese cars. In such a case, consult your Sony dealer.



Note
To prevent malfunction, install only with the supplied screws ⓒ.

Instalación

Precauciones

- No toque los cuatro orificios de la superficie superior de la unidad. Estos orificios son para ajustes del sintonizador que solamente deberán realizar técnicos de reparación.
- Elija cuidadosamente el lugar de montaje de forma que la unidad no interfiera las funciones normales de conducción.
- Evite instalar la unidad donde pueda quedar sometida a altas temperaturas, como a la luz solar directa o al aire de calefacción, o a polvo, suciedad, o vibraciones excesivas.
- Para realizar una instalación segura y firme, utilice solamente la ferretería de montaje suministrada.

Ajuste del ángulo de montaje

Ajuste el ángulo de montaje a menos de 20°.

Forma de extraer e instalar el panel frontal

Antes de instalar la unidad, extraiga el panel frontal.

A Para extraerlo

Antes de extraer el panel frontal, ceriórese de presionar (OFF). Después presione (OPEN) a fin de abrirlo, después deslícelo hacia la derecha, y por último tire de su parte izquierda.

B Para instalarlo

Coloque el orificio ⓐ del panel frontal en el eje ⓑ de la unidad, como se muestra en la ilustración, y después presione la parte izquierda.

Ejemplo de montaje

Instalación en el salpicadero

Montaje de la unidad en un automóvil japonés

Usted no podrá instalar esta unidad en algunos automóviles japoneses. En tal caso, consulte a su proveedor Sony.

Nota
Para evitar que se produzcan fallos, realice la instalación solamente con los tornillos suministrados ⓒ.

安裝

使用前注意事項

- 本機頂部的 4 個小孔請勿擅自觸動，它們僅供維修技術人員調整調諧器之用。
- 本機請放在不妨礙司機駕駛之處。
- 避免將本機放在高溫之處，如陽光直接照射、暖氣機前、或灰塵極多、髒亂，以及極易受震動等地方。
- 為了安全起見，安裝時請使用附送的部件。

安裝角度之調整

請在 20° 以內調整安裝角度。

如何拆卸和裝配前板

安裝本機之前，請先拆卸前板。

A 拆卸

拆卸前板之前，務必先按下 (OFF) 鍵。然後，按下 (OPEN) 鍵以便打開前板，將前板插槽向右邊滑動，然後從前板的左側拉出。

B 裝配

如圖所示，將前板的 ⓐ 孔對準本機的支軸 ⓑ 上，然後將左側推入。

安裝示例

在儀表板中安裝

將本機安裝於日本產汽車裡

有的日本產汽車不能安裝本機，在這種情形下，請您向當地的 Sony 經銷商諮詢。

註
為防止發生故障，安裝時只能使用附送的螺絲 ⓒ。

Installing the rotary commander

Notes

- *Choose the mounting location carefully so the rotary commander will not interfere with operating the car.*
- *Do not install the rotary commander in a place where it may jeopardize the safety of the (front) passenger in any way.*
- *When installing the rotary commander, be sure not to damage any electrical cables etc. on the other side of the mounting surface.*
- *Avoid installing the rotary commander where it may be subject to high temperatures, such as from direct sunlight or hot air from the heater etc.*

安裝旋轉式控制器

註

- *旋轉式控制器請裝在不妨礙行車駕駛之處。*
- *不可把旋轉式控制器裝在對（前面）乘客有危險的地方。*
- *安裝旋轉式控制器時，請注意不要損壞螺絲釘鬆及安裝面反面的電線等。*
- *避免把旋轉式控制器安裝在高溫，如直射陽光底下或受暖氣機熱流吹襲的地方。*

Instalación del mando rotativo

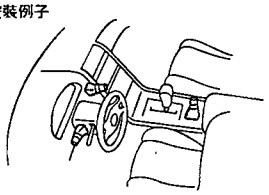
Notas

- *Elija cuidadosamente el lugar de montaje de forma que el mando rotativo no dificulte la conducción del coche.*
- *No instale el mando rotativo en un lugar donde pueda poner en peligro la seguridad del pasajero acompañante.*
- *Al instalar el mando rotativo, asegúrese de no dañar los cables de electricidad, etc., del otro lado de la superficie de montaje.*
- *Procure no instalar el mando rotativo en un lugar expuesto a altas temperaturas, como a la luz solar directa o al aire caliente de la calefacción, etc.*

Example of a mounting location

Ejemplo de un lugar de montaje

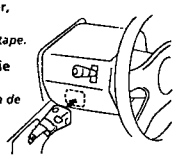
安裝例子



1 Choose the exact location for mounting the rotary commander, then clean the mounting surface.
Dirt and oil impair the adhesive strength of the double-sided adhesive tape.

Una vez elegido el lugar de montaje del mando rotativo, limpie previamente la superficie de montaje.
La suciedad o la grasa dañan la intensidad adhesiva de la cinta adhesiva de dos caras.

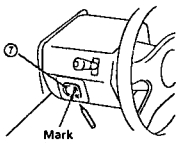
選擇一個適合安裝旋轉式控制器的地方，然後清潔安裝面。
表面骯髒或有油污會減低兩面膠帶的黏貼力。



2 Mark the position for the supplied screw.
Use the screw holes on the mounting hardware Ⓣ to mark the position.

Marque la posición para el tornillo suministrado.
Para ello, utilice los orificios para tornillos de la ferretería de montaje Ⓣ.

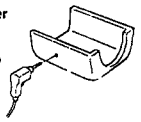
畫 1 個供螺絲釘鑽孔之處。
按照安裝零件 Ⓣ 的螺絲釘孔位置作記號。



3 Remove the steering wheel column cover, and drill 2 mm diameter hole at the marked position.

Extraiga la cubierta de la columna de la dirección y haga un orificio de 2 mm. de diámetro en el lugar marcado.

取下轉向柱外殼，並在所作記號之處鑽開 2 mm 大小的釘孔。



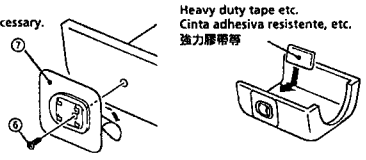
4 Warm the mounting surface and the double-sided adhesive tape on the mounting hardware Ⓣ to a temperature of 20°C to 30°C, and attach the mounting hardware to the mounting surface applying even pressure. Use the supplied screw Ⓢ to set into secure position.
Attach a piece of heavy duty tape etc. on the other side of the mounting surface to cover the protruding tips of the screws so they will not interfere with any electrical cables etc. inside the steering wheel column.

Caliente la superficie de montaje y la cinta adhesiva de doble cara de la ferretería de montaje Ⓣ a una temperatura entre 20°C y 30°C, y ajuste la ferretería de montaje a la superficie de montaje ejerciendo una presión uniforme. A continuación, apriete el tornillo Ⓢ suministrado.
Adhiera un trozo de cinta adhesiva resistente, etc., en el otro lado de la superficie de montaje para cubrir los extremos de los tornillos que sobresalgan, de forma que no interfieran con los cables de electricidad, etc., del interior de la columna de dirección.

把安裝面及安裝零件 Ⓣ 的兩面膠帶加熱至 20° 到 30° 程度，然後把安裝零件貼在轉向柱外殼，貼時所施加壓力須均等。以附屬的螺絲釘 Ⓢ 把安裝零件釘緊。
在安裝面的反面之螺絲釘尖端部分，貼上強力膠帶等，以免損害轉向柱裡面的電線等。

Cut the mounting hardware Ⓣ, if necessary.
Si es necesario, corte la pieza Ⓣ.
必要時，可截切安裝五金 Ⓣ。

Heavy duty tape etc.
Cinta adhesiva resistente, etc.
強力膠帶等



5 After reinstalling the steering wheel column cover, attach the rotary commander to the mounting hardware by aligning the four holes on the bottom of the rotary commander with the four catches on the mounting hardware and sliding the rotary commander until it locks into place as illustrated.

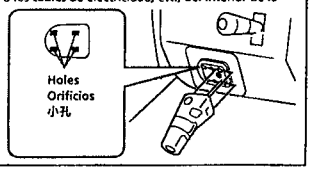
Note
If you are mounting the rotary commander on the steering wheel column, make sure that the protruding tips of the screws on the inner surface of the column do not in any way hinder or interfere with the movement of the rotating shaft, operative parts of the switches or the electrical cables etc. inside the column.

Una vez instalada la cubierta de la columna de dirección, fije el mando rotativo a la ferretería de montaje alineando los cuatro orificios de la parte inferior del mando con los cuatro enganches de la ferretería de montaje. A continuación, deslice el mando hasta que encaje en su sitio como se muestra en la ilustración.

Nota
Si monta el mando rotativo en la columna de dirección, asegúrese de que los extremos de los tornillos que sobresalgan de la superficie interior de la columna no dificulten el movimiento del eje de rotación ni los componentes operativos de los conmutadores o los cables de electricidad, etc., del interior de la columna.

在轉向柱外殼重新裝上以後，把遙控器裝在安裝零件裡。裝時請把遙控器底部的 4 個小孔對準安裝零件的 4 個小鉤，然後按照插圖所示，把遙控器插入零件裡。

註
在把遙控器裝在轉向柱外殼時，必須注意轉向柱裡的螺絲釘之尖端，不可阻礙或影響到轉向柱裡面的轉軸開關的操作部分或電線等。



Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in series with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual component's fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.

If your car has no accessory position on the ignition key switch — POWER SELECT switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if your car has no accessory position on the ignition key switch. To avoid this battery wear, set the **POWER SELECT** switch located on the bottom of the unit to the **B** position, then press the reset button. The illumination is reset to stay off while the unit is not being played.

Notes

- *The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the B position.*
- *Do not use excessive force when changing the POWER SELECT switch.*

When using the SUB/EQ OUT terminal

— LINE OUT/IN SELECT Switch

With the LINE OUT/IN SELECT switch on the bottom of the unit, you can change the SUB/EQ OUT terminal to work as SUB WOOFER VOLUME OUT or as EQ OUT terminal.

- When you want to use the SUB/EQ OUT terminal as SUB WOOFER VOLUME OUT terminal and connect an active subwoofer to it, set the switch to ①.
- When you want to use the SUB/EQ OUT terminal as EQ OUT terminal and connect a digital signal processor or graphic equalizer to it, set the switch to ❷. In this case, the FRONT LINE OUT terminal and REAR LINE OUT terminal will serve as FRONT LINE IN terminal and REAR LINE IN terminal, respectively.

Frequency select switch

The AM (FM) tuning interval is factory-set to the 9K (50 K) position. If the frequency allocation system of your country is based on 10 kHz (200 kHz) interval, set the switch on the bottom of the unit to the 10 K (200 K) position before making connections.

Note

When you change the position of the switch, be sure to press the reset button after the connections are completed.

Reset button

When the installation and connections are complete, be sure to press the reset button with a ballpoint pen etc.

Conexiones

Precauciones

- Esta unidad ha sido diseñada para alimentarse con 12 V CC, negativo a masa, solamente.
- Antes de realizar las conexiones, desconecte el terminal de puesta a masa de la batería del automóvil a fin de evitar cortocircuitos.
- Conecte los cables de entrada de alimentación **amarillo** y **rojo** solamente después de haber conectado los demás.
- Cerciórese de conectar el cable de entrada de alimentación rojo a un terminal de 12 V positivo que se energice al poner la llave de encendido en la posición para accesorios.
- **Conecte todos los conductores de puesta a masa a un punto común.**
- Conecte el cable amarillo a un circuito libre del automóvil que tenga una capacidad superior a la del fusible de la unidad. Si conecta esta unidad en serie con otros componentes estereofónicos, el circuito del automóvil al que se encuentran conectados debe tener una capacidad superior a la de la suma de las capacidades de los fusibles de cada componente. Si ningún circuito del automóvil tiene una capacidad tan alta como la del fusible de la unidad, conecte ésta directamente a la batería. Si el automóvil no dispone de ningún circuito para conectar esta unidad, conéctela a un circuito del automóvil con capacidad superior a la del fusible de la unidad, de forma que si se funde el fusible de ésta, no se interrumpa ningún otro circuito.

Si el automóvil no dispone de posición para accesorios en la llave de encendido — Selector POWER SELECT

La iluminación del panel frontal ha sido ajustada en fábrica para que esté activada aunque la unidad no se encuentre en reproducción. Sin embargo, este ajuste puede provocar cierta descarga de la batería del automóvil **si éste no dispone de posición para accesorios en la llave de encendido**. Para evitar esto, **ponga el selector POWER SELECT, situado en la base de la unidad, en la posición B y, después, presione el botón de reposición.** La iluminación estará desactivada cuando la unidad no se encuentre en reproducción.

Notas

- *La alarma de precaución del panel frontal no se activará cuando el selector POWER SELECT se encuentre en la posición B.*
- *No utilice excesiva fuerza al cambiar el selector POWER SELECT.*

Si utiliza el terminal SUB/EQ OUT

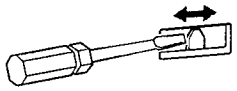
— Interruptor LINE OUT/IN SELECT

Con el interruptor LINE OUT/IN SELECT de la base de la unidad, es posible cambiar el terminal SUB/EQ OUT para que funcione como terminal SUB WOOFER VOLUME OUT o EQ OUT.

- Si desea emplear el terminal SUB/EQ OUT como terminal SUB WOOFER VOLUME OUT y conectarle un altavoz activo de potenciación de graves, ajuste el interruptor en ①.
- Si desea utilizar el terminal SUB/EQ OUT como terminal EQ OUT y conectarle un procesador de señales digital o un ecualizador gráfico, ajuste el interruptor en ❷. En este caso, los terminales FRONT LINE OUT y REAR LINE OUT funcionarán como terminales FRONT LINE IN y REAR LINE IN respectivamente.

Selector de frecuencia

El intervalo de sintonía de AM (FM) ha sido ajustado en fábrica a la posición 9 K (50 K). Si el sistema de asignación de frecuencias de su país se basa en el intervalo de 10 kHz (200 kHz), ponga este selector, situado en la base de la unidad, en la posición 10 K (200 K) antes de realizar las conexiones.

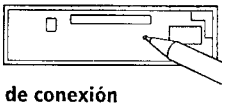


Nota

Cuando cambie la posición del selector, cerciórese de presionar los boton de reposición después de haber finalizado las conexiones.

Botón de reposición

Cuando finalice la instalación y las conexiones, cerciórese de presionar el botón de reposición con un bolígrafo, etc.



線路連接

注意

- 本機只能使用負極接地 12 V 直流電源。
- 連接前，先拔去汽車電池的接地端子，以免發生短路。
- 黃色和紅色電源輸入導線必須在所有其它導線都連接完畢以後才連接。
- 紅色電源導線務請連接至 12 V 電源端子，該電源端子在汽車發動機點火鑰匙處於輔助位置時才通電。
- 將所有地線都連接到同一地點。
- 將黃色導線連接到大於本機保險絲額定容量的未供用的汽車電路上。若將本機和其它立體聲裝置相互串聯，所連接的汽車電路容量必須大於各組成機保險絲容量的總和。
若沒有與本機保險絲額定容量一樣大的汽車電路可資利用，可將本機直接連接到電池上。若無適當的汽車電路可用於連接本機，請將本機連接到大於本機保險絲容量的汽車電路上，但連接法必須適當使本機的保險絲即使燒斷了，也不致於切斷其它電路。

若您的汽車在點火鑰匙上沒有輔助位置

— POWER SELECT 開關

前板的照明燈是出廠前設定好，使它即使在本機不受使用時也會發亮。若要在汽車發動機點火鑰匙沒有輔助位置的汽車上使用本機，此照明燈將會一直消耗微量的電池電力。因此，為了避免在這種狀態下的電池消耗，請將本機底部的 POWER SELECT 開關設定在 **B** 檔處，然後按下前板的**復位鍵**。這樣，不使用本機時，照明燈便不發亮。

註

- *POWER SELECT 開關處設定在 B 檔時，前板的操作鈕並無法動能便失效。*
- *變換 POWER SELECT 開關時，切勿用力過大。*

使用 SUB/EQ OUT 端子時

— LINE OUT/IN SELECT 開關

您可利用機器底部的 LINE OUT/IN SELECT 開關將 SUB/EQ OUT 端子的功能改成 SUB WOOFER VOLUME OUT 或 EQ OUT 端子使用。

- 當您想把 SUB/EQ OUT 端子當作 SUB WOOFER VOLUME OUT 端子使用，並在此連接上有源副低音揚聲器時，請將此開關調到 ①。
- 當您想把 SUB/EQ OUT 端子當作 EQ OUT 端子使用，並在此連接上數字式信號處理器或圖示均衡器時，請將此開關調到 ❷。在此情況下，FRONT LINE OUT 端子和 REAR LINE OUT 端子將各自成為 FRONT LINE IN 端子和 REAR LINE IN 端子。

頻率選擇開關

AM (FM) 調諧間隔在出廠前被設定在 9 K (50 K) 位置上。若貴國的頻率分配系統是以 10 KHz (200 KHz) 間隔為基礎的，連接前，請將本機底部上的開關設定在 10 K (200 K) 位置上。

註

改變了開關位置時，在完成連接工作後，一定要按一下復位鍵。

復位鍵

當安裝和連接完成後，務請用圓珠筆等按壓復位鍵。

Connection diagram

Diagramas de conexión

線路連接圖

Equipment used in illustrations (not supplied)
Equipo utilizado en las ilustraciones (no suministrado)
插圖中使用的裝置（無附帶）

Front speaker
Altavoz delantero
前揚聲器

Rear speaker
Altavoz trasero
後揚聲器

Active subwoofer
Altavoz activo de potenciación de graves
有源超低音揚聲器

TV monitor
Monitor de TV
電視監視器

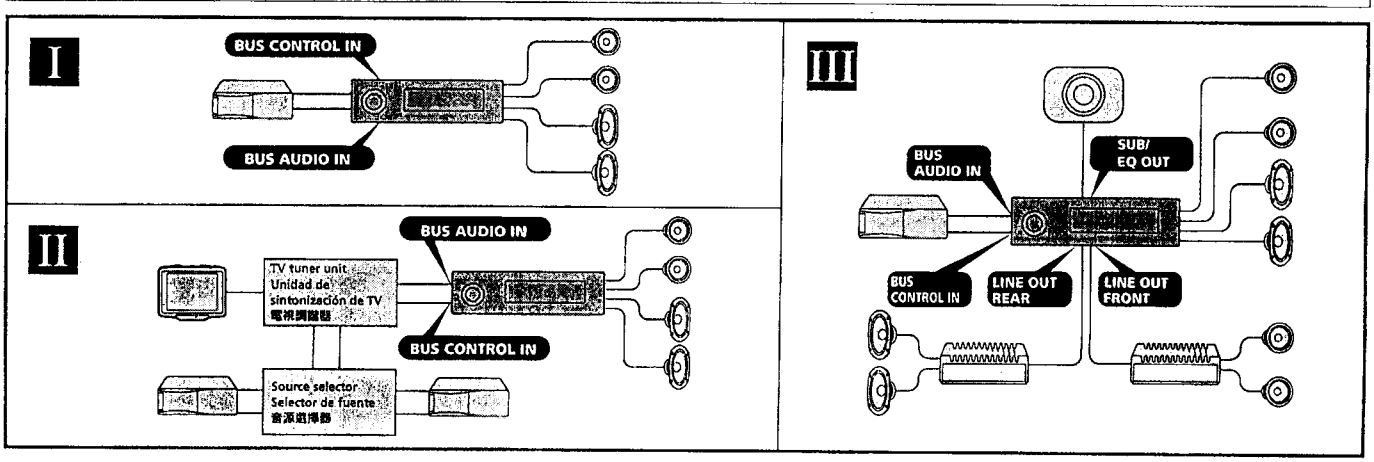
Power amplifier
Amplificador de potencia
功率放大器

CD/MD changer
Cambiador de CD/MD
CD/MD 換碟機

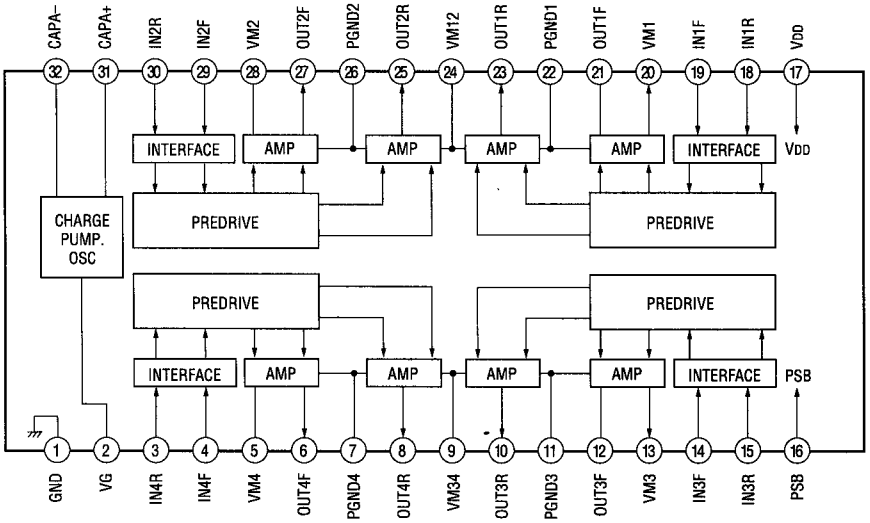
Note
For connecting two or more changers, the source selector XA-C30 (optional) is necessary.

Nota
Cuando desee conectar dos o más cambiadores, necesitará un selector de fuente XA-C30 (opcional).

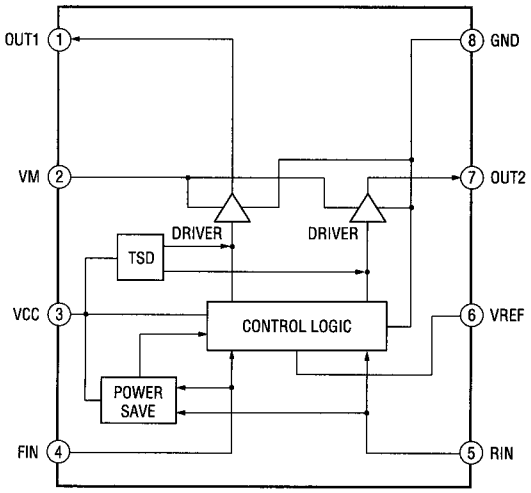
註
若要連接 2 台或 2 台以上換碟機時，必須使用音源選擇器 XA-C30（選購品）。



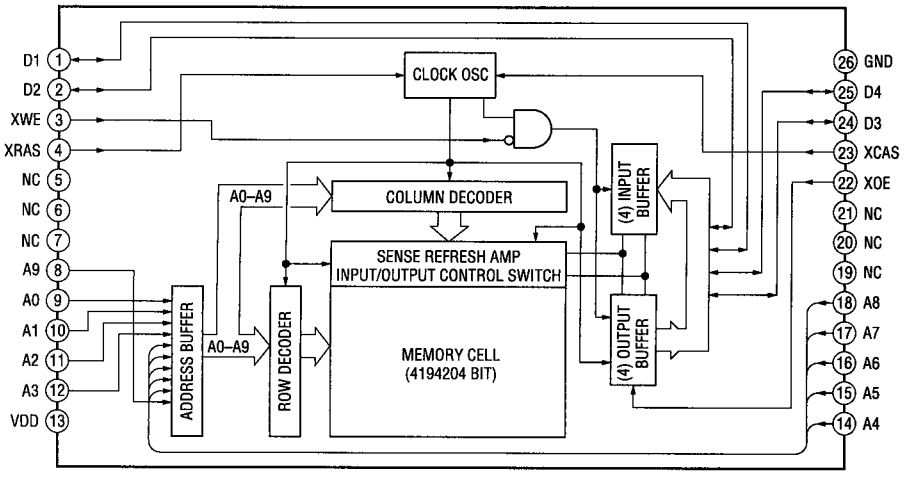
IC303 BH6511FS-E2



IC305 BA6287F

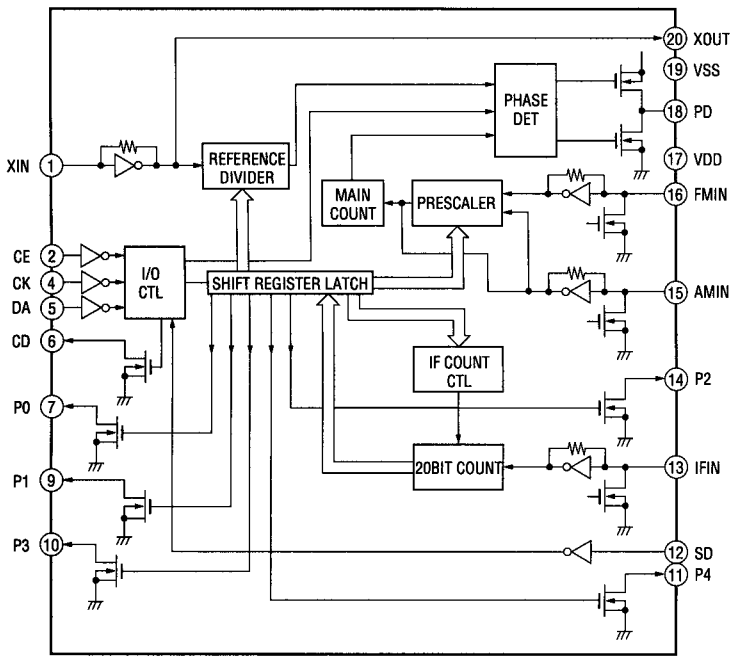


IC307 MSM51V4400-70TS-K

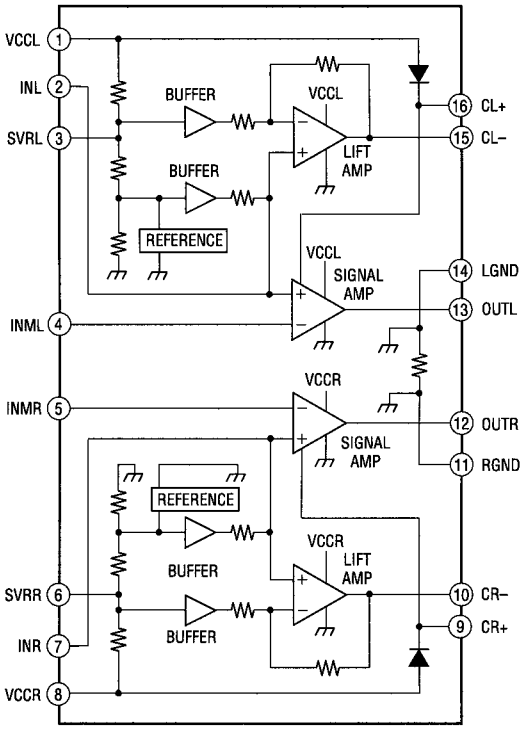


– MAIN Board –

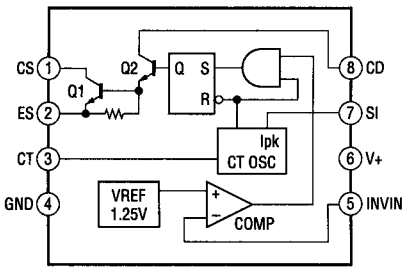
IC4 BU2624FV-E2



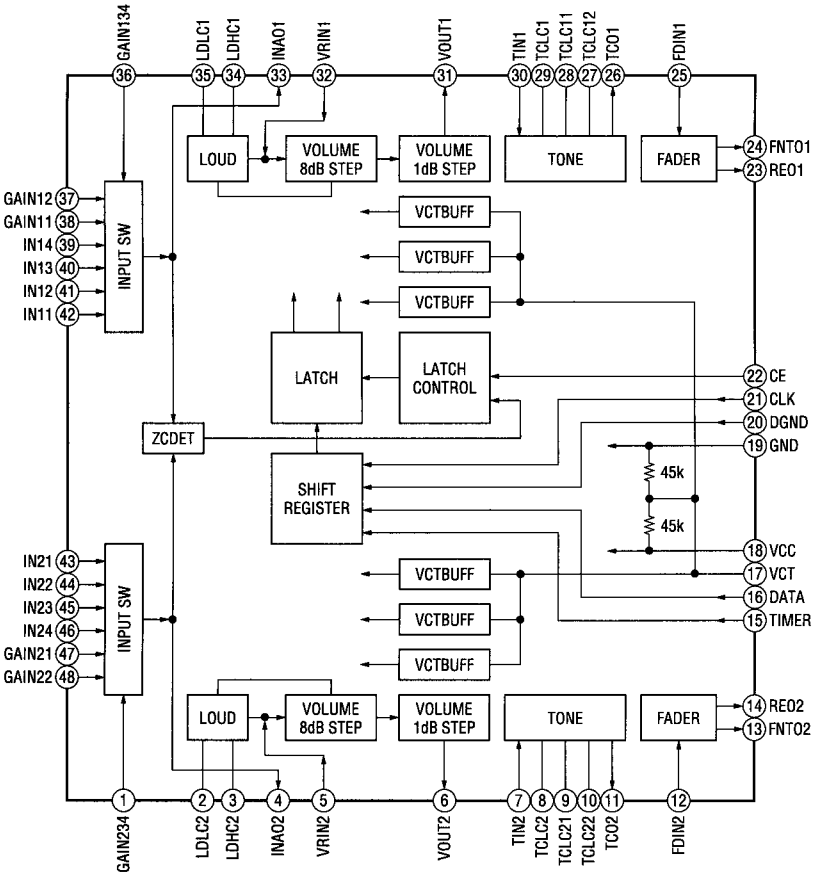
IC200,300 TDA8574 (T)



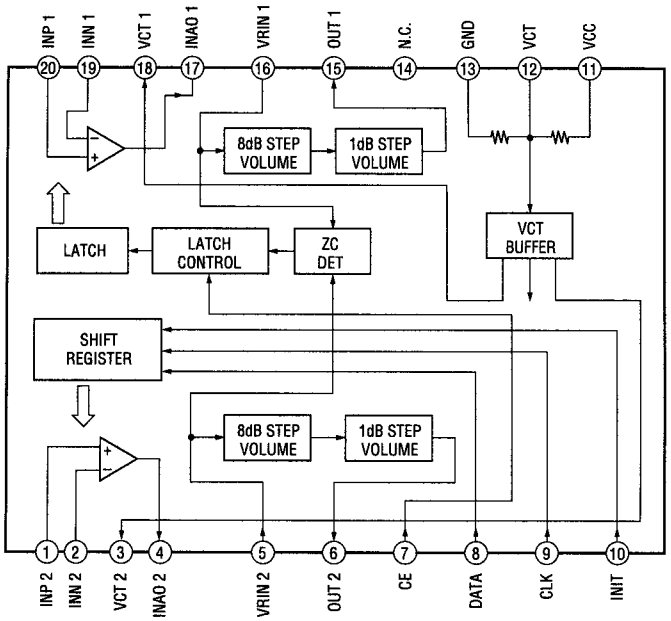
IC101 NJM2360AM (TE2)



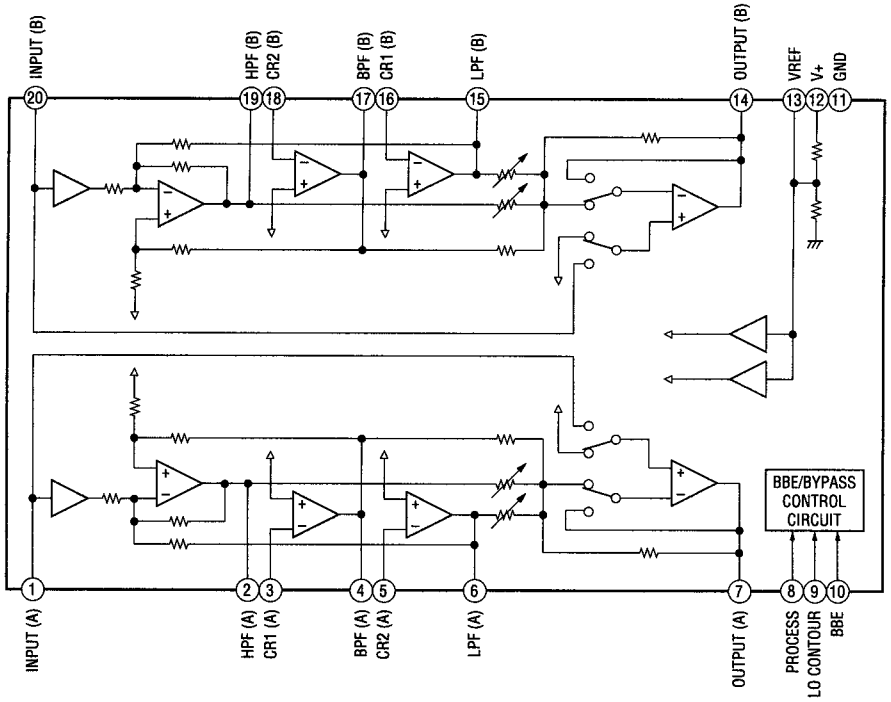
IC400 CXA1946BR



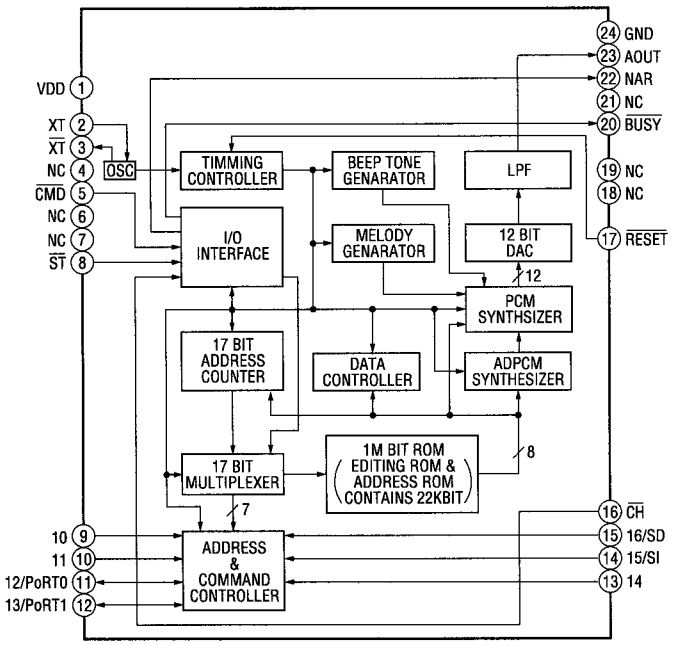
IC403 CXA1846AN-T4



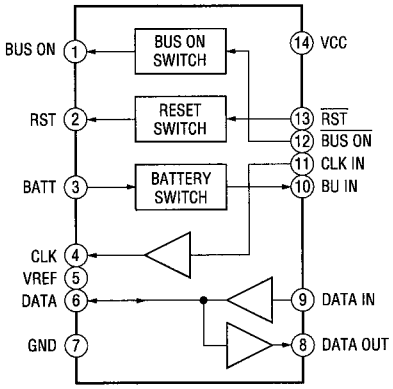
IC409 NJM2150AM-TE2



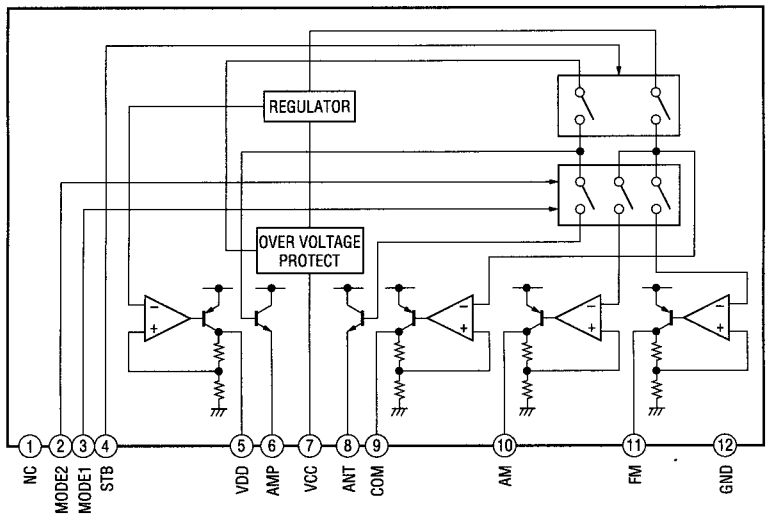
IC502 MSM6654A-519GS-KR1



IC504 BA8270F-E2

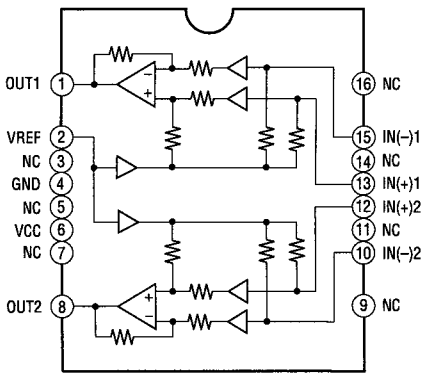


IC506 BA3918-V3



– AUDIO Board –

IC801,802 TA2050F (EL)



4-21. IC PIN FUNCTION DESCRIPTION

• SERVO BOARD IC301 CXD2652AR
(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR, EFM/ACIRC ENCODER/DECODER, SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER, 2M BIT D-RAM)

Pin No.	Pin Name	I/O	Function
1	MNT0	O	Focus OK signal output to the MD mechanism controller (IC501) "H" is output when focus is on ("L": NG)
2	MNT1	O	Track jump detection signal output to the MD mechanism controller (IC501)
3	MNT2	O	Monitor 2 signal output to the MD mechanism controller (IC501)
4	MNT3	O	Monitor 3 signal output to the MD mechanism controller (IC501)
5	SWDT	I	Writing serial data signal input from the MD mechanism controller (IC501)
6	SCLK	I	Serial data transfer clock signal input from the MD mechanism controller (IC501)
7	XLAT	I	Serial data latch pulse signal input from the MD mechanism controller (IC501)
8	SRDT	O (3)	Reading serial data signal output to the MD mechanism controller (IC501)
9	SENS	O (3)	Internal status (SENSE) output to the MD mechanism controller (IC501)
10	$\overline{\text{XRST}}$	I	Reset signal input from the MD mechanism controller (IC501) "L": reset
11	SQSY	O	Subcode Q sync (SCOR) output to the MD mechanism controller (IC501) "L" is output every 13.3 msec Almost all, "H" is output
12	DQSY	O	Digital In U-bit CD format subcode Q sync (SCOR) output terminal "L" is output every 13.3 msec Almost all, "H" is output Not used (open)
13	RECP	I	Laser power selection signal input terminal "H": recording mode, "L": playback mode (fixed at "L" in this set)
14	XINT	O	Interrupt status output to the MD mechanism controller (IC501)
15	TX	I	Recording data output enable signal input terminal Writing data transmission timing input (Also serves as the magnetic head on/off output) Not used (fixed at "L")
16	OSCI	I	System clock signal (512Fs=22.5792 MHz) input from the oscillator circuit
17	OSCO	O	System clock signal (512Fs=22.5792 MHz) output terminal Not used (open)
18	XTSL	I	Input terminal for the system clock frequency setting "L": 45.1584 MHz, "H": 22.5792 MHz (fixed at "H" in this set)
19	RVDD	—	Power supply terminal (+3.3V) (digital system)
20	RVSS	—	Ground terminal (digital system)
21	DIN	I	Digital audio signal input terminal when recording mode (for optical in) Not used (fixed at "L")
22	DOUT	O	Digital audio signal output terminal when playback mode (for optical out) Not used (open)
23	ADDT	I	Recording data input terminal Not used (fixed at "L")
24	DADT	O	Playback data output to the D/A converter (IC101)
25	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the D/A converter (IC101)
26	XBCK	O	Bit clock signal (2.8224 MHz) output to the D/A converter (IC101)
27	FS256	O	Clock signal (11.2896 MHz) output to the D/A converter (IC101)
28	DVDD	—	Power supply terminal (+3.3V) (digital system)
29	A03	O	Address signal output to the D-RAM (IC307)
30	A02	O	
31	A01	O	
32	A00	O	
33	A10	O	Address signal output to the external D-RAM Not used (open)
34	A04	O	Address signal output to the D-RAM (IC307)
35	A05	O	
36	A06	O	
37	A07	O	
38	A08	O	
39	A11	O	Address signal output to the external D-RAM Not used (open)

Pin No.	Pin Name	I/O	Function
40	DVSS	—	Ground terminal (digital system)
41	$\overline{\text{XOE}}$	O	Output enable signal output to the D-RAM (IC307) "L" active
42	$\overline{\text{XCAS}}$	O	Column address strobe signal output to the D-RAM (IC307) "L" active
43	A09	O	Address signal output to the D-RAM (IC307)
44	$\overline{\text{XRAS}}$	O	Row address strobe signal output to the D-RAM (IC307) "L" active
45	$\overline{\text{XWE}}$	O	Write enable signal output to the D-RAM (IC307) "L" active
46	D1	I/O	Two-way data bus with the D-RAM (IC307)
47	D0	I/O	
48	D2	I/O	
49	D3	I/O	
50	MVCI	I	Digital in PLL oscillation input from the external VCO Not used (fixed at "L")
51	ASYO	O	Playback EFM full-swing output terminal
52	ASYI	I (A)	Playback EFM asymmetry comparator voltage input terminal
53	AVDD	—	Power supply terminal (+3.3V) (analog system)
54	BIAS	I (A)	Playback EFM asymmetry circuit constant current input terminal
55	RFI	I (A)	Playback EFM RF signal input from the CXA2523R (IC302)
56	AVSS	—	Ground terminal (analog system)
57	PDO	O (3)	Phase comparison output for clock playback analog PLL of the playback EFM Not used (open)
58	PCO	O (3)	Phase comparison output for master clock of the recording/playback EFM master PLL
59	FILI	I (A)	Filter input for master clock of the recording/playback master PLL
60	FILO	O (A)	Filter output for master clock of the recording/playback master PLL
61	CLTV	I (A)	Internal VCO control voltage input of the recording/playback master PLL
62	PEAK	I (A)	Light amount signal (RF/ABCD) peak hold input from the CXA2523R (IC302)
63	BOTM	I (A)	Light amount signal (RF/ABCD) bottom hold input from the CXA2523R (IC302)
64	ABCD	I (A)	Light amount signal (ABCD) input from the CXA2523R (IC302)
65	FE	I (A)	Focus error signal input from the CXA2523R (IC302)
66	AUX1	I (A)	Auxiliary signal (I_3 signal/temperature signal) input terminal Not used (fixed at "H")
67	VC	I (A)	Middle point voltage (+1.65V) input from the CXA2523R (IC302)
68	ADIO	O (A)	Monitor output of the A/D converter input signal Not used (open)
69	AVDD	—	Power supply terminal (+3.3V) (analog system)
70	ADRT	I (A)	A/D converter operational range upper limit voltage input terminal (fixed at "H" in this set)
71	ADRB	I (A)	A/D converter operational range lower limit voltage input terminal (fixed at "L" in this set)
72	AVSS	—	Ground terminal (analog system)
73	SE	I (A)	Sled error signal input from the CXA2523R (IC302)
74	TE	I (A)	Tracking error signal input from the CXA2523R (IC302)
75	AUX2	I (A)	Auxiliary signal input terminal Light amount signal input from the CXA2523R (IC302)
76	DCHG	I (A)	Connected to the +3.3V power supply
77	APC	I (A)	Error signal input for the laser automatic power control Not used (fixed at "L")
78	ADFG	I	ADIP duplex FM signal (22.05 kHz ± 1 kHz) input from the CXA2523R (IC302)
79	F0CNT	O	Filter f0 control signal output terminal Not used (open)
80	XLRF	O	Serial data latch pulse signal output terminal Not used (open)
81	CKRF	O	Serial data transfer clock signal output terminal Not used (open)
82	DTRF	O	Writing serial data output terminal Not used (open)
83	APCREF	O	Control signal output to the reference voltage generator circuit for the laser automatic power control
84	LDDR	O	PWM signal output for the laser automatic power control Not used (open)
85	TRDR	O	Tracking servo drive PWM signal (–) output to the BH6511FS (IC303)
86	TFDR	O	Tracking servo drive PWM signal (+) output to the BH6511FS (IC303)

Pin No.	Pin Name	I/O	Function
87	DVDD	—	Power supply terminal (+3.3V) (digital system)
88	FFDR	O	Focus servo drive PWM signal (+) output to the BH6511FS (IC303)
89	FRDR	O	Focus servo drive PWM signal (–) output to the BH6511FS (IC303)
90	FS4	O	Clock signal (176.4 kHz) output terminal (X'tal system) Not used (open)
91	SRDR	O	Sled servo drive PWM signal (–) output to the BH6511FS (IC303)
92	SFDR	O	Sled servo drive PWM signal (+) output to the BH6511FS (IC303)
93	SPRD	O	Spindle servo drive PWM signal (–) output to the BH6511FS (IC303)
94	SPFD	O	Spindle servo drive PWM signal (+) output to the BH6511FS (IC303)
95	FGIN	I	Not used (fixed at "L")
96	TEST1	I	Input terminal for the test (fixed at "L")
97	TEST2	I	
98	TEST3	I	
99	DVSS	—	Ground terminal (digital system)
100	EFMO	O	EFM signal output terminal when recording mode Not used (open)

* I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O.

• **SERVO BOARD IC302 CXA2523R (RF AMP, FOCUS/TRACKING ERROR AMP)**

Pin No.	Pin Name	I/O	Function
1	I	I	I-V converted RF signal I input from the optical pick-up block detector
2	J	I	I-V converted RF signal J input from the optical pick-up block detector
3	VC	O	Middle point voltage (+1.65V) generation output terminal
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input from the optical pick-up block laser diode
11	APC	O	Laser amplifier output terminal to the automatic power control circuit
12	APCREF	I	Reference voltage input terminal for setting laser power
13	GND	—	Ground terminal
14	TEMPI	I	Connected to the temperature sensor Not used (open)
15	TEMPR	O	Output terminal for a temperature sensor reference voltage Not used (open)
16	SWDT	I	Writing serial data input from the MD mechanism controller (IC501)
17	SCLK	I	Serial data transfer clock signal input from the MD mechanism controller (IC501)
18	XLAT	I	Serial data latch pulse signal input from the MD mechanism controller (IC501)
19	$\overline{\text{XSTBY}}$	I	Standby signal input terminal "L": standby (fixed at "H" in this set)
20	F0CNT	I	Center frequency control voltage input terminal of internal circuit (BPF22, BPF3T, EQ) input terminal
21	VREF	O	Reference voltage output terminal Not used (open)
22	EQADJ	I	Center frequency setting terminal for the internal circuit (EQ)
23	3TADJ	I	Center frequency setting terminal for the internal circuit (BPF3T)
24	VCC	—	Power supply terminal (+3.3V)
25	WBLADJ	I	Center frequency setting terminal for the internal circuit (BPF22)
26	TE	O	Tracking error signal output to the CXD2652AR (IC301)
27	CSLED	I	Connected to the external capacitor for low-pass filter of the sled error signal
28	SE	O	Sled error signal output to the CXD2652AR (IC301)
29	ADFM	O	FM signal output of the ADIP
30	ADIN	I	Receives a ADIP FM signal in AC coupling
31	ADAGC	I	Connected to the external capacitor for ADIP AGC
32	ADFG	O	ADIP duplex signal (22.05 kHz ± 1 kHz) output to the CXD2652AR (IC301)
33	AUX	O	Auxiliary signal (I_3 signal/temperature signal) output terminal Not used (open)
34	FE	O	Focus error signal output to the CXD2652AR (IC301)
35	ABCD	O	Light amount signal (ABCD) output to the CXD2652AR (IC301)
36	BOTM	O	Light amount signal (RF/ABCD) bottom hold output to the CXD2652AR (IC301)
37	PEAK	O	Light amount signal (RF/ABCD) peak hold output to the CXD2652AR (IC301)
38	RF	O	Playback EFM RF signal output to the CXD2652AR (IC301)
39	RFAGC	I	Connected to the external capacitor for RF auto gain control circuit
40	AGCI	I	Receives a RF signal in AC coupling
41	COMPO	O	User comparator output terminal Not used (open)
42	COMPP	I	User comparator input terminal Not used (fixed at "L")
43	ADDC	I	Connected to the external capacitor for cutting the low band of the ADIP amplifier
44	OPO	O	User operational amplifier output terminal Not used (open)
45	OPN	I	User operational amplifier inversion input terminal Not used (fixed at "L")
46	RFO	O	RF signal output terminal
47	MORFI	I	Receives a MO RF signal in AC coupling
48	MORFO	O	MO RF signal output terminal

• **MAIN BOARD IC500 MB90574PFV-G-130-BND (MASTER CONTROLLER)**

Pin No.	Pin Name	I/O	Function
1	$\overline{\text{SEEKOUT}}$	O	Seek control signal output to the FM/AM tuner unit (TU1) AM mode: Used for IF count output/SD output request/AGC cut at SEEK or BTM FM mode: Used for SD speed up at SEEK, BTM, or AF "L" is output at tuner off
2	NCO	O	Not used (open)
3	WIDE	O	IF band select signal output to the FM/AM tuner unit (TU1) "H": wide mode In receiving FM signals, interference noise from adjacent stations is removed by narrowing the IF band automatically in the tuner unit so as to raise the selectivity, but in this case, the distortion may increase and accordingly, the IF band is widened forcibly
4	ST-MONO	I/O	FM stereo broadcasting detection signal input from the FM/AM tuner unit (TU1), or forced monaural control signal output to the FM/AM tuner unit (TU1) "L" is input in the FM stereo mode, or "L" is output in the forced monaural mode
5	TU-ATT	O	Muting on/off control signal output of the FM tuner signal "H": muting on
6	FM-ON	O	FM system power supply on/off control signal output to the BA3918 (IC506) "H": FM power on, "L": AM power on
7	TU-ON	O	Tuner system power supply on/off control signal output to the BA3918 (IC506) "H": tuner power on
8	VCC	—	Power supply terminal (+5V)
9	$\overline{\text{CSV-RST}}$	O	Reset signal output to the MSM6654A (IC502) "L": reset
10	$\overline{\text{BUS-ON}}$	O	Bus on/off control signal output to the MD mechanism controller (IC501) and SONY bus interface (IC504) "L": bus on
11	$\overline{\text{SYSRST}}$	O	Reset signal output to the MD mechanism controller (IC501) and SONY bus interface (IC504) "L": reset
12	$\overline{\text{DOORSW}}$	I	Front panel open/close detection signal input "L" is input when the front panel is closed
13	LCD SO	O	Serial data output to the liquid crystal display driver (IC900)
14	LCD CKO	O	Serial data transfer clock signal output to the liquid crystal display driver (IC900)
15	BEEP	O	Beep sound drive signal output terminal
16	LCD CE	O	Chip enable signal output to the liquid crystal display driver (IC900) "H" active
17	UNISI	I	Serial data input from the SONY bus interface (IC504)
18	UNISO	O	Serial data output to the SONY bus interface (IC504)
19	UNICKIO	I/O	Serial data transfer clock signal in/out terminal with the MD mechanism controller (IC501) and SONY bus interface (IC504)
20	SD-IN	I	Station detector detect input from the FM/AM tuner unit (TU1) Stop level for SEEK, BTM, etc. is determined SD is present at input of "H"
21	CSV-SO	O	Serial data output to the MSM6654A (IC502)
22	CSV-CKO	O	Serial data transfer clock signal output to the MSM6654A (IC502)
23	CSV-CE	O	Chip enable signal output to the MSM6654A (IC502) "H" active
24	SIRCS	I	Sircs remote control signal input from the remote control receiver (IC901)
25	PLLSI	I	PLL serial data input from the FM/AM PLL (IC4)
26	PLLSO	O	PLL serial data output to the FM/AM PLL (IC4)
27	PLLCKO	O	PLL serial data transfer clock signal output to the FM/AM PLL (IC4)
28	PLLCE	O	PLL chip enable signal output to the FM/AM PLL (IC4) "H" active
29	ILL-ON	O	Power on/off control signal output of the illumination LED and liquid crystal display driver (IC900) "H": power on Depends on initial setting of power select switch (SW500) Power select switch (SW500) on: "H" output at the accessory on Power select switch (SW500) off: "H" output at the power on
30	DIMMER	I/O	Dimmer control in/out terminal At initial mode: The presence of dimmer select function is set (if this status, if "L" is input, the dimmer select function is present) At normal mode: LCD back light brightness control signal output

Pin No.	Pin Name	I/O	Function
31	TIRIND	O	Not used (open)
32	$\overline{\text{LCDINH}}$	O	Blank indicate control signal output to the liquid crystal display driver (IC900) "L": no display
33	VSS	—	Ground terminal
34	C	—	Connected to coupling capacitor for the power supply
35	$\overline{\text{AD-ON}}$	O	A/D converter power control signal output When the KEYACK (pin ⑦⑧) that controls reference voltage power for key A/D conversion input is active, "L" is output from this terminal to enable the input
36	RE-IN0	I	Dial pulse input of the rotary encoder (RE900) (for VOLUME/BASS/TREBLE/BALANCE/FADER control)
37	RE-IN1	I	
38	DVCC	—	Power supply terminal (+5V) (for D/A converter)
39	DVSS	—	Ground terminal (for D/A converter)
40	NCO	O	Not used (open)
41	LCDANG	O	View field angle control signal is output when front panel is fully opened "H": front panel is fully opened
42	AVCC	—	Power supply terminal (+5V) (for A/D converter)
43	AVRH	I	Reference voltage (+5V) input terminal (for A/D converter)
44	AVRL	I	Reference voltage (0V) input terminal (for A/D converter)
45	AVSS	—	Ground terminal (for A/D converter)
46	KEYIN0	I	Key input terminal (A/D input) (LSW900, S900, LSW901 to LSW908) OFF, SEEK/AMS ◀◀ ⏮ – + ⏭ ▶▶, MODE, SOURCE, SOUND, DSPL, SHIFT, 1, 2, 3 keys input
47	KEYIN1	I	Key input terminal (A/D input) (LSW701, LSW909, LSW912 to LSW918) ⏏, LIST, 10, 9, 8, 7, 6, 5, 4 keys input
48	RC-IN0	I	Rotary remote commander key input terminal (A/D input)
49	DSTSEL0	I	Destination setting terminal Not used (open)
50	DSTSEL1	I	Destination setting terminal (fixed at 3/4 voltage)
51	DSTSEL2	I	Destination setting terminal (US model: fixed at "H", E model: frequency select switch input)
52	MTP	I	Not used (open)
53	VSM	I	FM and AM signal meter voltage detection input from the FM/AM tuner unit (TU1) (A/D input)
54	VCC	—	Power supply terminal (+5V)
55	$\overline{\text{RAMBU}}$	I	Internal RAM reset detection signal input from the RN5VD33AA (IC503) Input terminal to check that RAM data are not destroyed due to low voltage This checking is made within 100 msec after reset
56	POWSEL	I	Power select switch (SW500) input terminal "L": on (operation mode), "H": off (halt mode)
57	$\overline{\text{EQ-SEL}}$	I	Equalizer (or DSP) connect detection initial setting input from LINE OUT/IN SELECT switch (SW400) "L": Equalizer (or DSP) is connected, "H": not connected When equalizer is connected, the fader is set to center, sub volume becomes same value as main volume, and the set function is deleted
58	$\overline{\text{TESTIN}}$	I	Setting terminal for the test mode "L": test mode, Normally: fixed at "H"
59	DOOR-IND	O	LED drive signal output of the illumination LED (LED701, 703) "H": LED on "H" is output to turn on LED when front panel is opened
60	TIR-PLAY	O	Not used (open)
61	SUB-SW1	O	Sub woofer output cut-off frequency select signal output terminal
62	SUB-SW0	O	Sub woofer output cut-off frequency select signal output terminal
63	VSS	—	Ground terminal
64	VOLCE	O	Chip enable signal output to the main electrical volume (IC400) "H": active
65	ATT	O	Audio line muting on/off control signal output terminal "H": muting on
66	VOLSO/ SUBSO	O	Serial data output to the main electrical volume (IC400) and sub electrical volume (IC403)

Pin No.	Pin Name	I/O	Function
67	VOLCKO/ SUBCKO	O	Serial data transfer clock signal output to the main electrical volume (IC400) and sub electrical volume (IC403)
68	SUBCE	O	Chip enable signal output to the sub electrical volume (IC403) "H" active
69	$\overline{\text{FLASH-W}}$	I	Internal flash memory data write mode detection signal input terminal "L": data write mode Not used (fixed at "H" in this set)
70	RDSSI	I	Serial data input from the external device Not used (open)
71	RDSCKI	I	Serial data transfer clock signal input from the external device Not used (open)
72	RC-IN1	I	Rotary remote commander shift key input terminal "L": shift
73	X1A	O	Sub system clock output terminal (32 kHz)
74	X0A	I	Sub system clock input terminal (32 kHz)
75	DAVN	I	Not used (open)
76	KEYACK	I	Input of acknowledge signal for the key entry Acknowledge signal is input to accept function and eject keys in the power off status On at input of "H"
77	BU IN	I	Battery detect signal input from the SONY bus interface (IC504) and battery detect circuit "L" is input at low voltage
78	$\overline{\text{ILL IN}}$	I	Auto dimmer control illumination line detection signal input terminal "L" is input at dimmer detection
79	TEL-ATT	I	Telephone muting signal input terminal At input of "L", the signal is attenuated by –20 dB
80	$\overline{\text{NOSESW}}$	I	Front panel block remove/attach detection switch (SW503) signal input terminal "L": front panel is attached
81	$\overline{\text{ACC IN}}$	I	Accessory detect signal input terminal "L": accessory on
82 to 85	TIR-D0 to TIR-D3	O	Not used (pull down)
86	HSTX	I	Hardware standby input terminal "L": hardware standby mode Reset signal input in this set
87	MD2	I	Setting terminal for the CPU operational mode (fixed at "L" in this set)
88	MD1	I	Setting terminal for the CPU operational mode (fixed at "H" in this set)
89	MD0	I	Setting terminal for the CPU operational mode (fixed at "H" in this set)
90	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC505) and reset switch (SW701) "L" is input for several 100 msec after power on, then it changes to "H"
91	VSS	—	Ground terminal
92	X0	I	Main system clock input terminal (3.68 MHz)
93	X1	O	Main system clock output terminal (3.68 MHz)
94	VCC	—	Power supply terminal (+5V)
95	TIR-BUSY	O	Not used (pull down)
96	TIR-WR	O	Not used (pull down)
97	TIR-CE	O	Not used (pull down)
98	BBE	O	Boost on/off control signal output to the NJM2150AM (IC409)
99	LO	O	Low-range boost control signal output to the NJM2150AM (IC409)
100	PRO	O	High-range boost control signal output to the NJM2150AM (IC409)
101	TIR-RD	O	Not used (pull down)
102	MTLIN	I	Not used (fixed at "L")
103	$\overline{\text{AM STIN}}$	I	AM detection signal input terminal Not used (fixed at "L")
104	LOCK	I	Mini-disc lock detection signal input from the MD mechanism controller (IC501) "H": lock CLV lock status input in test mode
105 to108	POS0 to POS3	I	Not used (fixed at "L")
109	MD MUTE	I	The audio muting control signal is input from the MD mechanism controller (IC501), and output to ATT (pin ⑮)
110	LM-LOD	O	Not used (pull down)
111	LINKOFF	O	Not used (pull down)
112	TAPE-ON	O	Not used (pull down)

Pin No.	Pin Name	I/O	Function
113	N-ROUT	O	Not used (pull down)
114	DM0	O	Not used (pull down)
115	DM1	I/O	Not used (open)
116	IIS	I/O	Not used (open)
117	CSV-NAR	I	Input of signal indicating whether the register that latches the address or MSM6654A (IC502) and 16 to 10 address of command controller is empty or not "H": empty status
118	LED-ON	O	Illumination LED drive signal output terminal "H": LED on Also, power amp (IC600) standby on/off control is executed "L": standby, "H": amp on
119	VSS	—	Ground terminal
120	POWON	O	Main system power supply on/off control signal output to the BA3918 (IC506) "H": power on

• **SERVO BOARD IC501 CXP84340-201Q (MD MECHANISM CONTROLLER)**

Pin No.	Pin Name	I/O	Function
1 to 5	TIN3 to TIN7	I/O	Input of the 4×8 matrix test keys ("L" is always output, except in test mode) Not used (open)
6	LOAD	O	Loading motor control signal output to the motor driver (IC305) *1
7	EJECT	O	Loading motor control signal output to the motor driver (IC305) *1
8, 9	NCO	O	Not used (open)
10	MDMON	O	Power supply on/off control signal output of the MD mechanism deck section main power supply and loading motor drive (IC305) power supply "H": power on
11	$\overline{\text{E-SW}}$	I	Inputs the disc loading completion detect switch detection signal "L": When completed of the disc loading operation
12	AG-OK	O	Output of aging status in test mode "H": aging completed, "L": under aging Not used (open)
13	ADJ-OK	O	Output of status when aging completed in test mode "H": aging OK, "L": aging NG Not used (open)
14 to 17	NCO	O	Not used (open)
18	DFCTSEL	I	Select whether defect function is used for the CXD2652AR (IC301) "H": not used this function, "L": used this function (fixed at "H" in this set)
19	DPLLSEL	I	Select whether digital pll function is used for the CXD2652AR (IC301) "H": not used this function, "L": used this function (fixed at "H" in this set)
20	EMPHSEL	I	Select whether emphasis signal output from pin or unilink data "H": output from pin only, "L": outputs from both pin and unilink data (fixed at "H" in this set)
21	LOCK	O	Mini-disc lock detection signal output to the master controller (IC500) "H": lock
22	NCO	O	Not used (open)
23	2M/$\overline{\text{4M}}$	I	Select whether D-RAM capacitance 2M bit or 4M bit "H": 2M bit (internal D-RAM of IC301 CXD2652AR), "L": 4M bit (external D-RAM) (fixed at "L" in this set)
24, 25	NCO	O	Not used (open)
26	MNT0	I	Focus OK signal input from the CXD2652AR (IC301) "H" is input when focus is on ("L": NG)
27	MNT1	I	Track jump detection signal input from the CXD2652AR (IC301)
28	MNT2	I	Monitor 2 signal input from the CXD2652AR (IC301)
29	MNT3	I	Monitor 3 signal input from the CXD2652AR (IC301)
30	$\overline{\text{RESET}}$	I	System reset signal input from the master controller (IC500), reset signal generator (IC505) and reset switch (SW701) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
31	EXTAL	O	Main system clock output terminal (10 MHz)
32	XTAL	I	Main system clock input terminal (10 MHz)
33	VSS	—	Ground terminal
34	TX	O	Sub system clock output terminal (32.768 kHz) Not used (open)
35	TEX	I	Sub system clock input terminal (32.768 kHz) Not used (fixed at "L")
36	AVSS	—	Ground terminal (for A/D converter)
37	AVREF	I	Reference voltage input terminal (+5V) (for A/D converter)
38	INIT	I	Initial reset signal input terminal (A/D input) (fixed at "H")
39	TEMP	I	Temperature sensor (TH501) input terminal (A/D input)
40	ACNT	I	Select the number of load/eject aging times (A/D input) 0H – 54H (30 times), 55H – OA9H (20 times), OAAH – OFFH (10 times)
41	DO-SEL	I	Select the digital output bits (A/D input)
42	EE-CS	O	Chip select signal output to the external EEPROM device Not used (open)
43	EE-CKO	O	Serial data transfer clock signal output to the external EEPROM device Not used (open)
44	EE-SIO	I/O	Two way data bus with the external EEPROM device Not used (open)
45	MD-SO	O	Writing serial data signal output to the CXD2652AR (IC301) and CXA2523R (IC302)
46	LINKOFF	O	Unilink on/off control signal output to the SONY bus interface (IC504) "H": link off, "L": link on

Pin No.	Pin Name	I/O	Function
47	UNIREQ	O	Data request signal output terminal (for SONY bus) "H": request on Not used (open)
48	UNICKI	I	Serial data transfer clock signal input from the master controller (IC500) (for SONY bus)
49	UNISI	I	Serial data input from the SONY bus interface (IC504)
50	UNISO	O	Serial data output to the SONY bus interface (IC504)
51	MD-CKO	O	Serial data transfer clock signal output to the CXD2652AR (IC301) and CXA2523R (IC302)
52	MD-SI	I	Reading serial data signal input from the CXD2652AR (IC301)
53	NCO	O	Not used (open)
54	SENS	I	Internal status (SENSE) input from the CXD2652AR (IC301)
55	CC-XINT	I	Interrupt status input from the CXD2652AR (IC301)
56	$\overline{\text{LIMIT-IN}}$	I	Detection input from the sled limit-in detect switch The optical pick-up is inner position when "L"
57	EJT-KEY	I	Eject request signal input terminal "L": eject on Not used (fixed at "H")
58	ERROR-PWM	O	PWM error monitor output terminal (C1and ATER is output when test mode) Not used (open)
59	$\overline{\text{MD-RST}}$	O	Reset signal output to the D/A converter (IC101), CXD2652AR (IC301) and BH6511FS (IC303) "L": reset
60	BU-IN	I	Battery detect signal input from the SONY bus interface (IC504) and battery check circuit "H": battery on
61	$\overline{\text{BUS-ON}}$	I	SONY bus on/off control signal input from the master controller (IC500) "L": bus on
62	SQSY	I	Subcode Q sync (SCOR) input from the CXD2652AR (IC301) "L" is input every 13.3 msec Almost all, "H" is input
63	$\overline{\text{C-SW}}$	I	Inputs the disc loading start or disc eject completion detect switch detection signal "L": When start or eject completed of the disc loading operation
64	MD-LAT	O	Serial data latch pulse signal output to the CXD2652AR (IC301) and CXA2523R (IC302)
65	MD-ON	O	Power supply on/off control signal output of the MD mechanism deck section main power supply "H": power on
66	DEEMP	O	Emphasis on/off control signal output to the D/A converter (IC101) "H": emphasis on
67	A-MUTE	O	Audio muting on/off control signal output terminal "H": muting on
68	NCO	O	Not used (open)
69	TSTCKO	O	Output of clock signal for the test mode display Not used (open)
70	TSTSO	O	Output of data for the test mode display Not used (open)
71	$\overline{\text{TSTMOD}}$	I	Setting terminal for the test mode "L": test mode, "H": normal mode
72	VCC	—	Power supply terminal (+5V)
73	NC	I	Not used (fixed at "H")
74 to 77	TOUT0 to TOUT3	O	Output of the 4×8 matrix test keys Not used (open)
78 to 80	TIN0 to TIN2	I/O	Input of the 4×8 matrix test keys ("L" is always output, except in test mode) Not used (open)

*1 Loading motor (M903) control

Operation / Terminal	IN	OUT	BRAKE	STOP
LOAD (pin ⑥)	"H"	"L"	"H"	"L"
EJECT (pin ⑦)	"L"	"H"	"H"	"L"

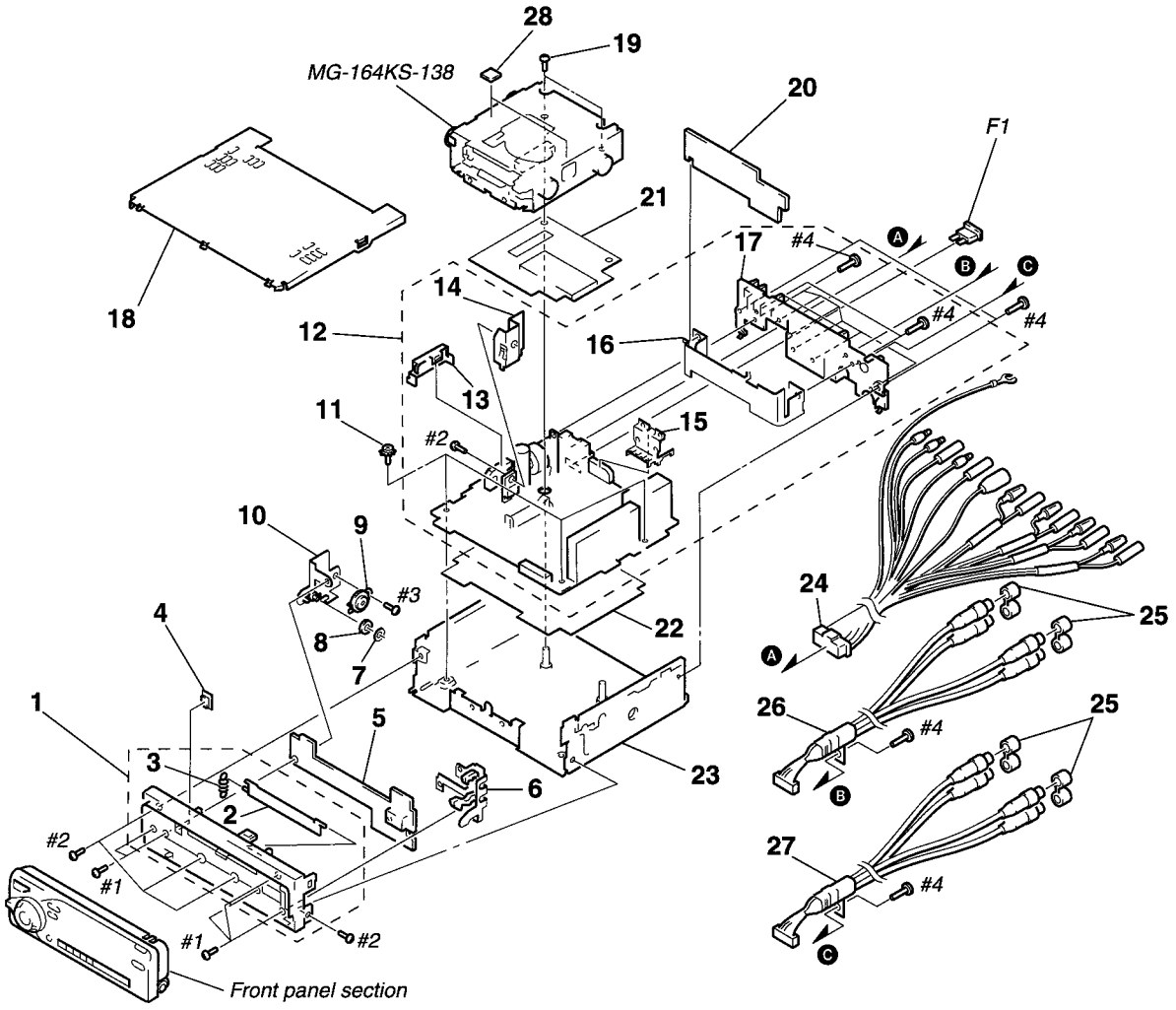
SECTION 5
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

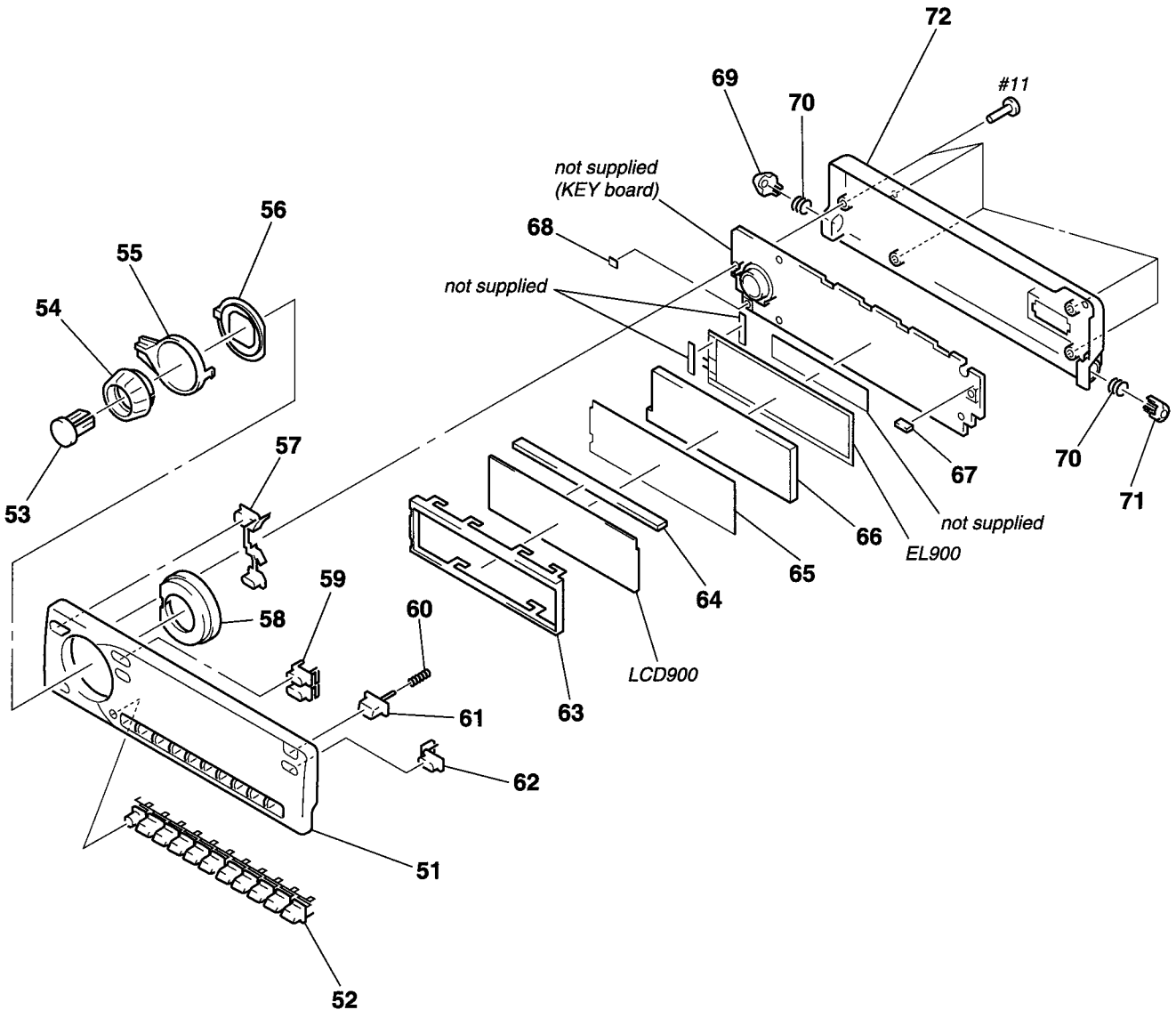
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) GENERAL SECTION



Ref. No.	Part No.	Description	Remark
1	X-3375-470-1	PANEL ASSY, SUB	
2	3-025-483-01	DOOR (MD)	
3	3-025-484-01	SPRING (DOOR)	
4	3-022-338-01	BUTTON (EJECT) (⏏)	
* 5	1-670-311-11	SUB RELAY BOARD	
6	X-3375-068-1	LOCK ASSY	
7	3-341-752-11	WASHER, POLYETHYLENE	
8	3-011-170-01	GEAR (HOLDER)	
9	3-953-235-01	DAMPER, OIL	
10	X-3375-066-1	BRACKET (GEAR) ASSY	
11	3-915-923-01	SCREW, GROUND POINT	
* 12	A-3294-452-A	MAIN BOARD, COMPLETE (US)	
* 12	A-3294-453-A	MAIN BOARD, COMPLETE (E)	
* 13	3-011-078-01	BRACKET (POWER IC)	
* 14	3-937-122-01	HEAT SINK	
* 15	3-022-317-01	BRACKET (AMP)	
* 16	3-026-537-01	BRACKET (AUDIO)	
* 17	3-025-481-01	HEAT SINK	
* 18	3-022-316-31	COVER	
19	3-932-860-01	SCREW (2.6X4) (C TIGHT), +PTT	
* 20	A-3294-454-A	AUDIO BOARD, COMPLETE	
* 21	3-028-408-01	PLATE (2), SHIELD	
* 22	3-024-951-01	SHEET, INSULATING	
* 23	X-3375-753-3	CHASSIS ASSY	
24	1-776-207-72	CORD (WITH CONNECTOR) (POWER)	
25	3-339-410-01	COVER (2), PIN JACK	
26	1-783-862-31	CORD (WITH CONNECTOR) (RCA) (SUB/EQ OUT, BUS AUDIO IN)	
27	1-783-862-41	CORD (WITH CONNECTOR) (RCA) (FRONT LINE OUT/IN, REAR LINE OUT/IN)	
28	3-011-999-01	CUSHION (MD)	
F1	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10A)	

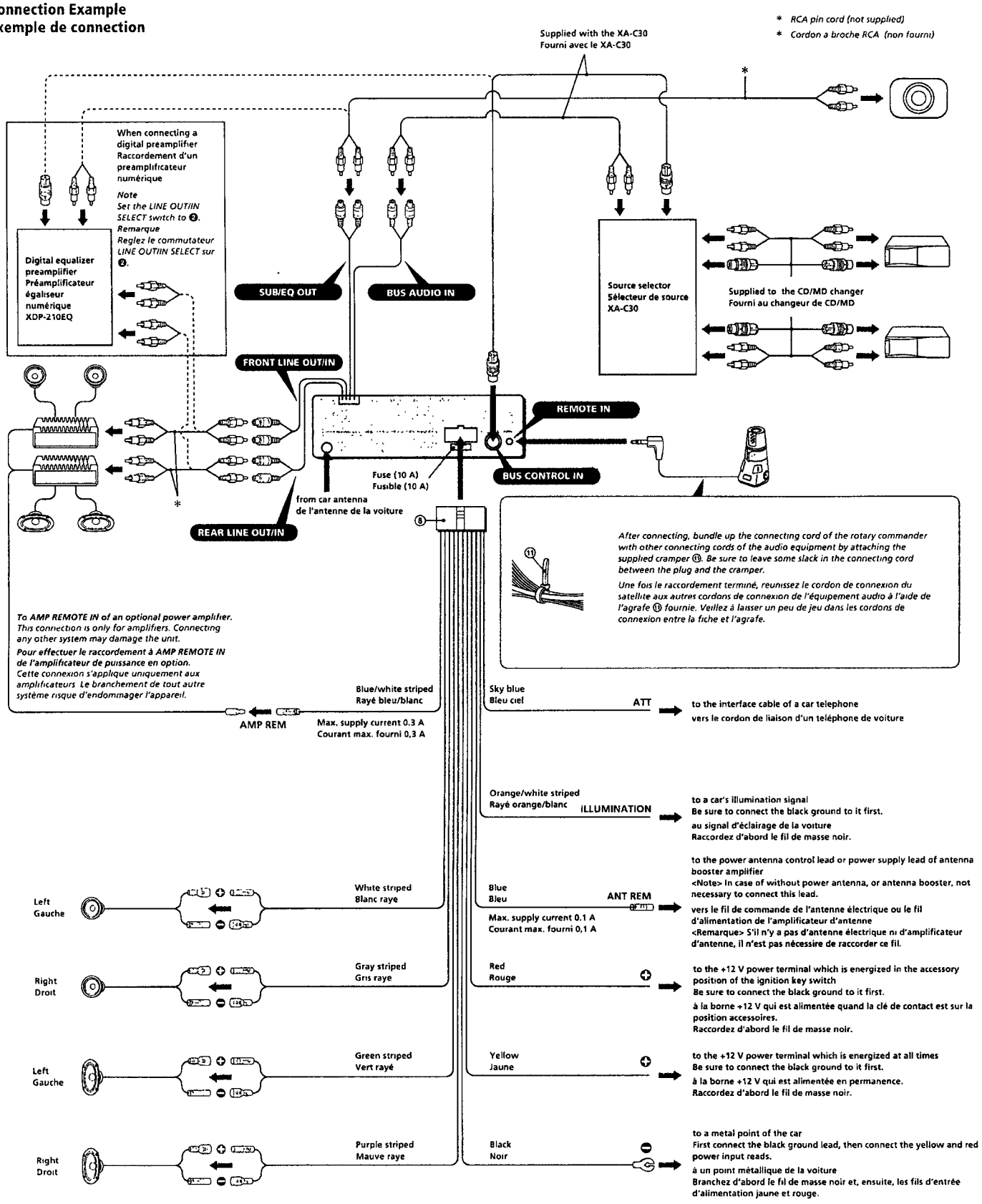
(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-3375-958-1	PANEL SUB ASSY, FRONT (US)	
51	X-3375-959-1	PANEL SUB ASSY, FRONT (E)	
52	3-022-332-01	BUTTON (10 KEY) (SHIFT. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10)	
53	3-022-329-01	BUTTON (SOURCE)	
54	3-022-322-01	KNOB	
55	3-022-323-01	LEVER (SHUTTLE) (+ ▶▶I ▶▶. ◀◀ I◀◀ –. SEEK/AMS)	
56	3-022-324-01	PLATE (SHUTTLE), LIGHT GUIDE	
57	3-022-330-11	BUTTON (MODE) (MODE. OFF)	
58	3-022-325-01	PLATE (RING), LIGHT GUIDE	
59	3-022-331-01	BUTTON (SOUND) (SOUND. DSPL)	
60	3-932-225-01	SPRING (OPEN)	
61	3-022-333-01	BUTTON (OPEN)	

Ref. No.	Part No.	Description	Remark
62	3-022-334-01	BUTTON (LIST)	
* 63	3-022-327-01	PLATE (LCD), GROUND	
64	1-694-414-11	CONDUCTOR BOARD, CONNENTION (RUBBER CONNECTOR)	
* 65	3-022-328-01	ILLUMINATOR (LCD)	
* 66	3-022-326-01	PLATE (LCD), LIGHT GUIDE	
67	3-017-983-01	CUSHION (10)	
68	3-327-119-01	SPACER (A)	
69	3-010-999-01	BEARING (L)	
70	3-010-998-01	SPRING (BEARING)	
71	3-011-000-01	BEARING (R)	
72	3-022-319-01	PANEL, FRONT BACK	
EL900	1-517-766-11	LIGHT, ELECTRO LUMINESCENT	
LCD900	1-803-107-11	DISPLAY PANEL, LIQUID CRYSTAL	

Connection Example
Exemple de connection


* RCA pin cord (not supplied)
* Cordon a broche RCA (non fourni)
Supplied with the XA-C30
Fourni avec le XA-C30
When connecting a digital preamplifier
Raccordement d'un preamplificateur numérique
Note
Set the LINE OUT/IN SELECT switch to ❷.
Remarque
Reglez le commutateur LINE OUT/IN SELECT sur ❷.
Digital equalizer preamplifier
Préamplificateur égaliseur numérique
XDP-210EQ
SUB/EQ OUT
BUS AUDIO IN
Source selector
Sélecteur de source
XA-C30
Supplied to the CD/MD changer
Fourni au changeur de CD/MD
FRONT LINE OUT/IN
REMOTE IN
BUS CONTROL IN
Fuse (10 A)
Fusible (10 A)
from car antenna
de l'antenne de la voiture
REAR LINE OUT/IN
After connecting, bundle up the connecting cord of the rotary commander with other connecting cords of the audio equipment by attaching the supplied cramper ⑪. Be sure to leave some slack in the connecting cord between the plug and the cramper.
Une fois le raccordement terminé, reunissez le cordon de connexion du satellite aux autres cordons de connexion de l'équipement audio à l'aide de l'agrafe ⑪ fournie. Veillez à laisser un peu de jeu dans les cordons de connexion entre la fiche et l'agrafe.
To AMP REMOTE IN of an optional power amplifier.
This connection is only for amplifiers. Connecting any other system may damage the unit.
Pour effectuer le raccordement à AMP REMOTE IN de l'amplificateur de puissance en option.
Cette connexion s'applique uniquement aux amplificateurs. Le branchement de tout autre système risque d'endommager l'appareil.
Blue/white striped
Rayé bleu/blanc
AMP REM
Max. supply current 0.3 A
Courant max. fourni 0,3 A
Sky blue
Bleu ciel
ATT
to the interface cable of a car telephone
vers le cordon de liaison d'un teléphone de voiture
Orange/white striped
Rayé orange/blanc
ILLUMINATION
to a car's illumination signal
Be sure to connect the black ground to it first.
au signal d'éclairage de la voiture
Raccordez d'abord le fil de masse noir.
Left
Gauche
White striped
Blanc raye
Blue
Bleu
ANT REM
to the power antenna control lead or power supply lead of antenna booster amplifier
<Note> In case of without power antenna, or antenna booster, not necessary to connect this lead.
vers le fil de commande de l'antenne électrique ou le fil d'alimentation de l'amplificateur d'antenne
<Remarque> S'il n'y a pas d'antenne électrique ni d'amplificateur d'antenne, il n'est pas nécessire de raccorder ce fil.
Max. supply current 0.1 A
Courant max. fourni 0,1 A
Right
Droit
Gray striped
Gris raye
Red
Rouge
to the +12 V power terminal which is energized in the accessory position of the ignition key switch
Be sure to connect the black ground to it first.
à la borne +12 V qui est alimentée quand la clé de contact est sur la position accessoires.
Raccordez d'abord le fil de masse noir.
Left
Gauche
Green striped
Vert rayé
Yellow
Jaune
to the +12 V power terminal which is energized at all times
Be sure to connect the black ground to it first.
à la borne +12 V qui est alimentée en permanence.
Raccordez d'abord le fil de masse noir.
Right
Droit
Purple striped
Mauve raye
Black
Noir
to a metal point of the car
First connect the black ground lead, then connect the yellow and red power input reads.
à un point métallique de la voiture
Branchez d'abord le fil de masse noir et, ensuite, les fils d'entrée d'alimentation jaune et rouge.

Notes on the control leads
- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off

Notes on speaker connection
- *Before connecting the speakers, turn the unit off*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker*
- *Do not attempt to connect the speakers in parallel*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals*

Remarques sur les fils de contrôle
- *Le fil de contrôle de l'antenne électrique (bleu) fournit une tension continue de +12 V quand vous mettez l'appareil sous tension.*
- *Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil*

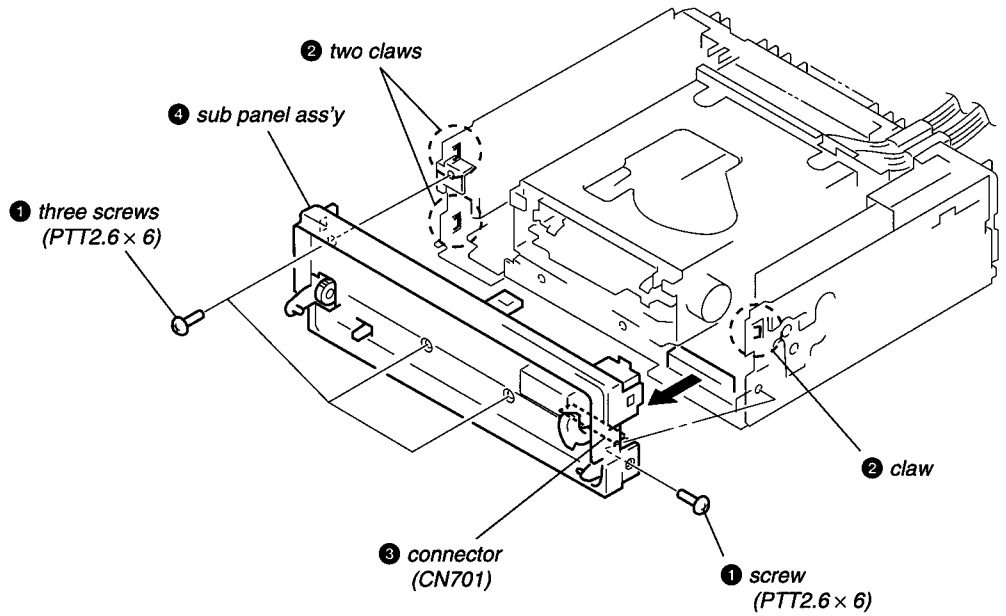
Connexion pour la conservation de la mémoire
Lorsque le fil d'entrée d'alimentation jaune est connecté, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur la connexion des haut-parleurs
- *Avant de raccorder les haut-parleurs, mettre l'appareil hors tension.*
- *Utiliser des haut-parleurs ayant une impédance de 4 à 8 ohms et une capacité adéquate sous peine de les endommager*
- *Ne pas raccorder les bornes du système de haut-parleurs au châssis de la voiture et ne pas connecter les bornes du haut-parleur droit a celles du haut-parleur gauche*
- *Ne pas tenter de raccorder les haut parleurs en parallèle*
- *Ne pas raccorder des haut-parleurs actifs (avec amplificateurs integres) aux bornes de haut-parleur de l'appareil sous peine de les endommager. Veiller à raccorder des haut-parleurs passifs a ces bornes*

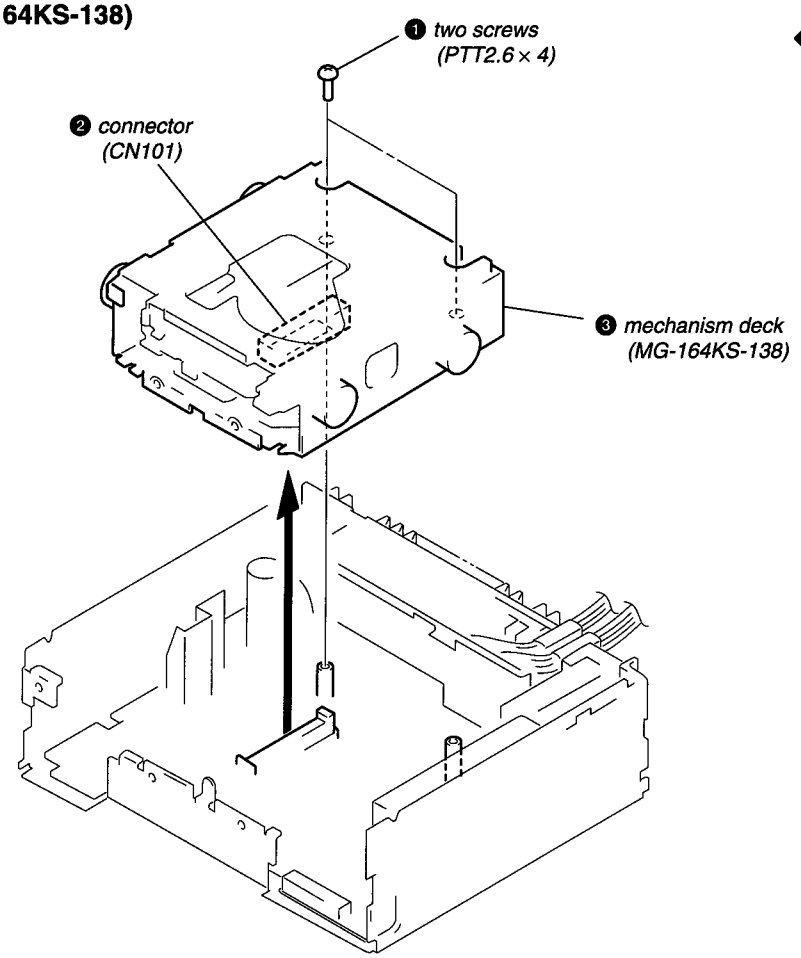
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

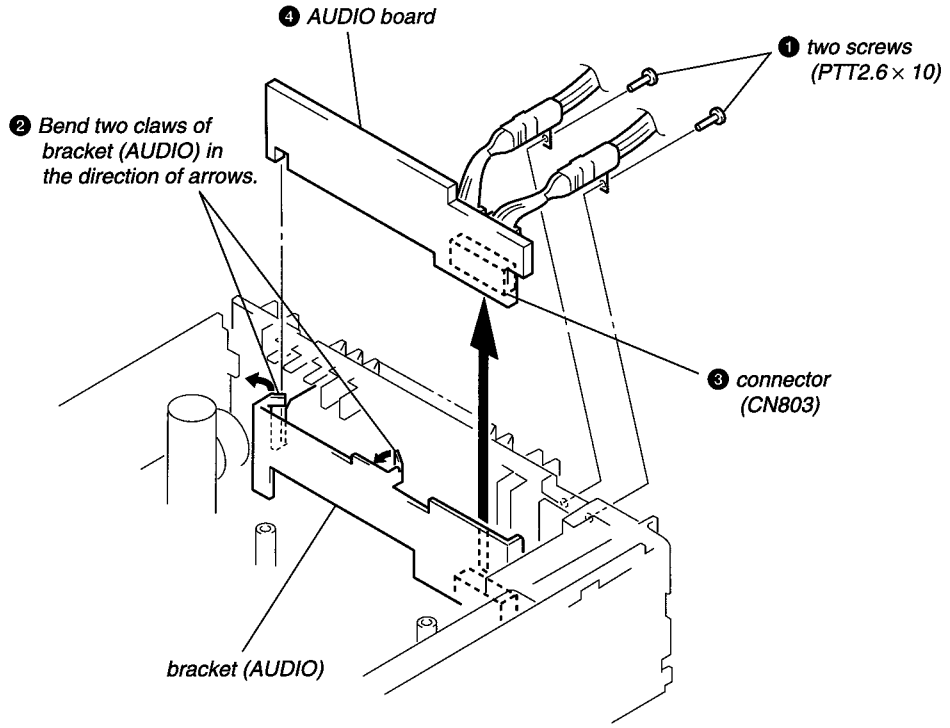
SUB PANEL ASS'Y



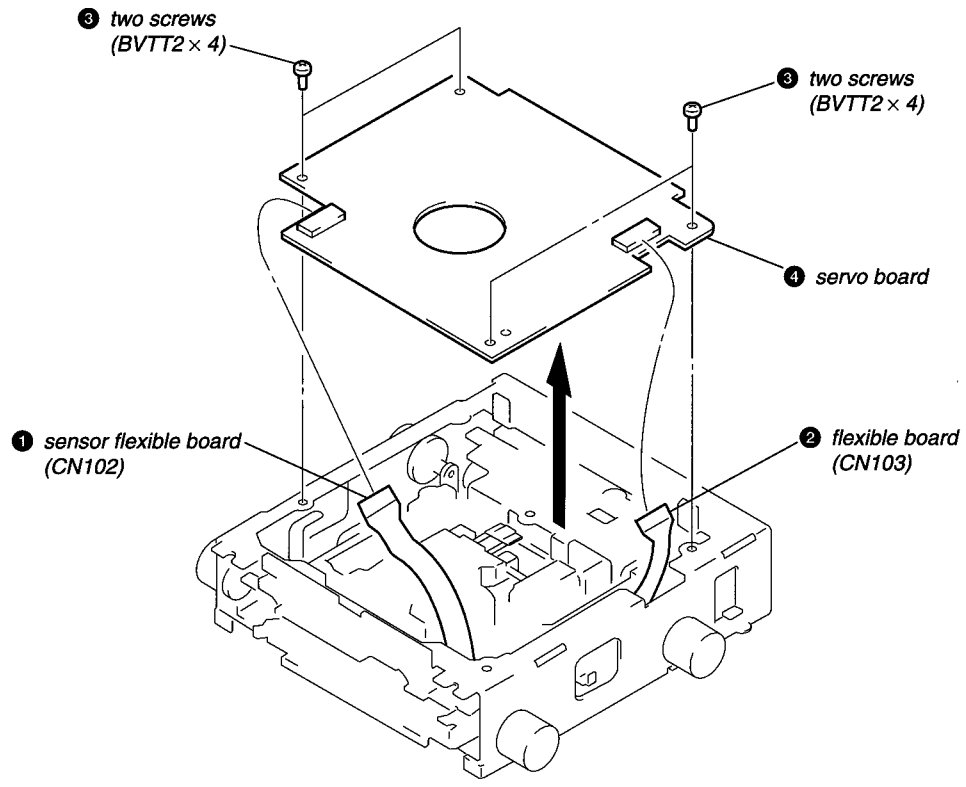
MECHANISM DECK (MG-164KS-138)



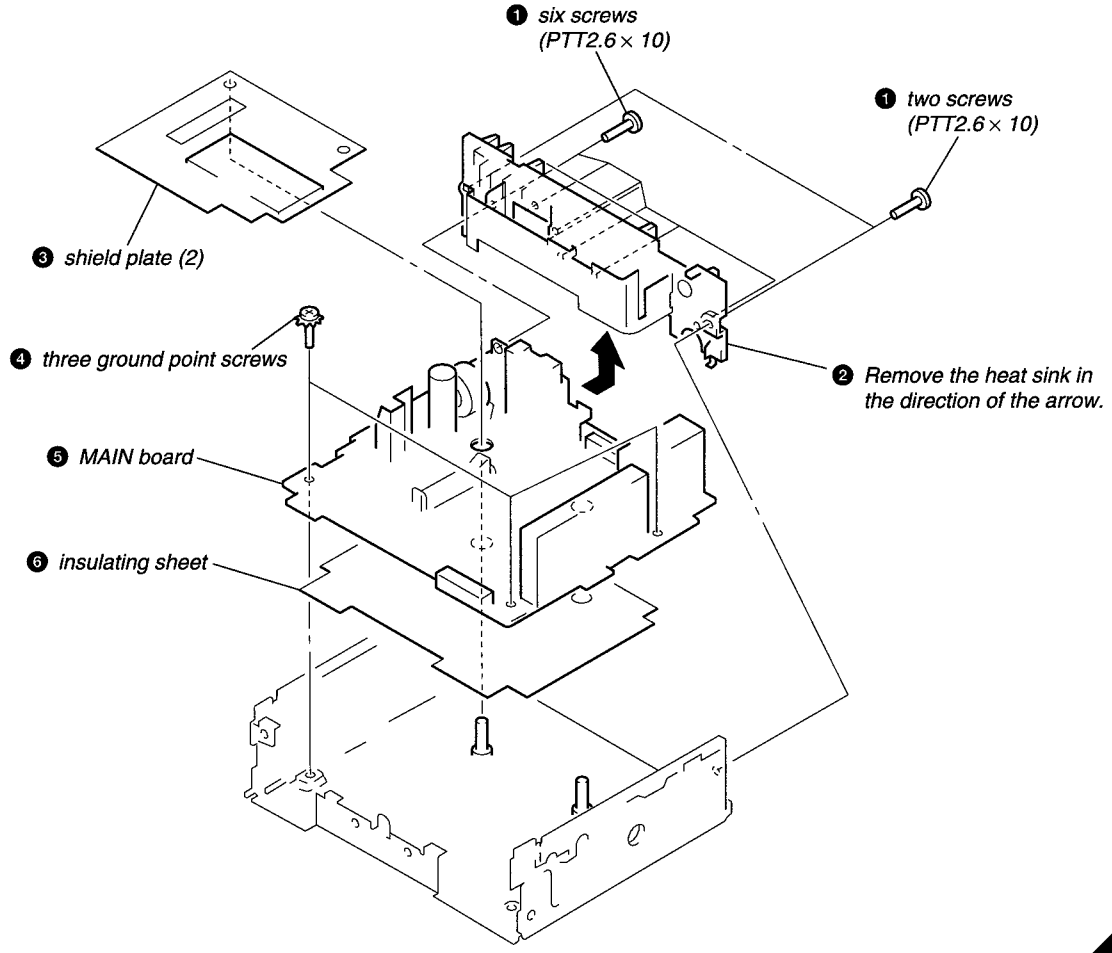
AUDIO BOARD


❹ AUDIO board
❶ two screws (PTT2.6 × 10)
❷ Bend two claws of bracket (AUDIO) in the direction of arrows.
❸ connector (CN803)
bracket (AUDIO)

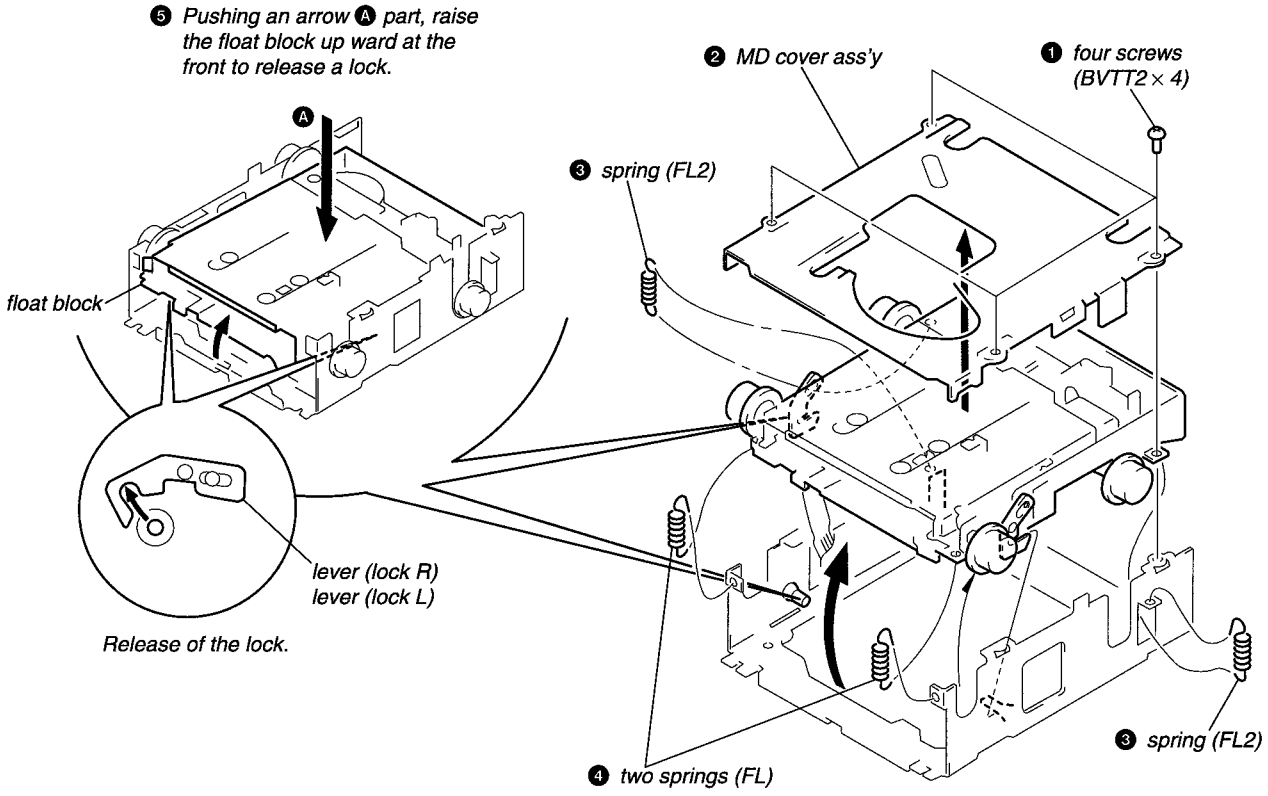
SERVO BOARD



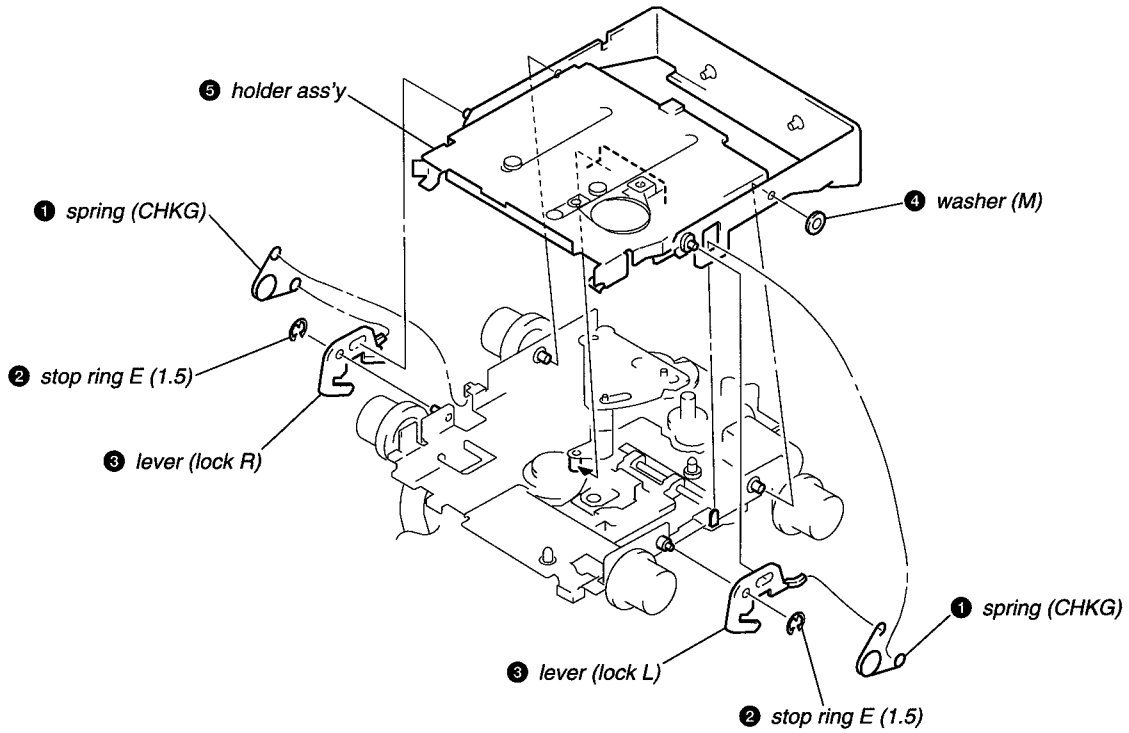
MAIN BOARD


❶ six screws (PTT2.6 × 10)
❶ two screws (PTT2.6 × 10)
❸ shield plate (2)
❹ three ground point screws
❷ Remove the heat sink in the direction of the arrow.
❺ MAIN board
❻ insulating sheet

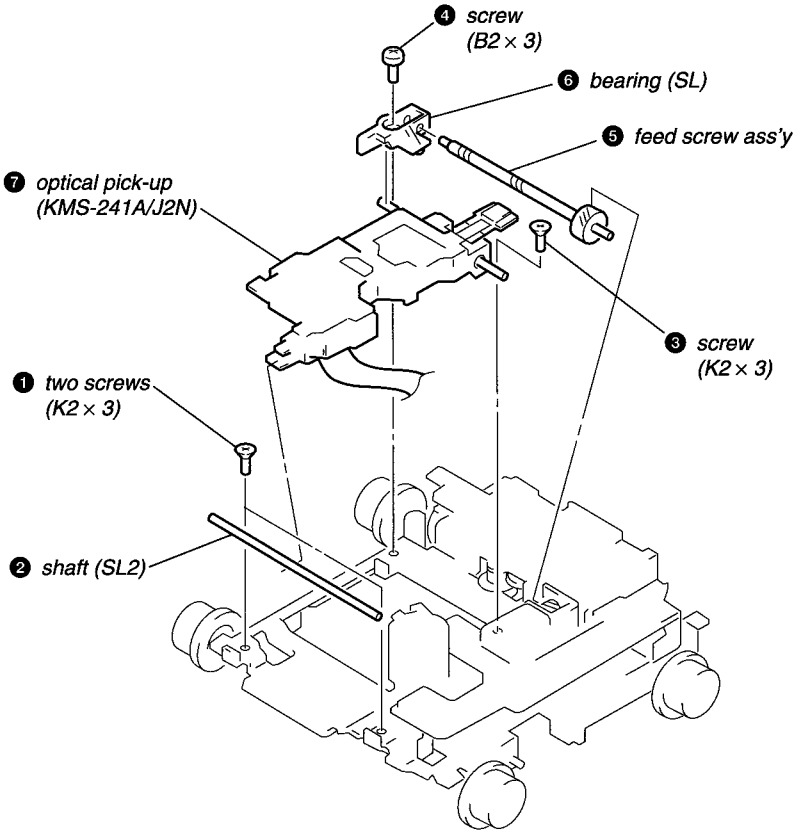
FLOAT BLOCK


❺ Pushing an arrow Ⓐ part, raise the float block up ward at the front to release a lock.
Ⓐ
float block
lever (lock R)
lever (lock L)
Release of the lock.
❷ MD cover ass'y
❶ four screws (BVTT2 × 4)
❸ spring (FL2)
❹ two springs (FL)
❸ spring (FL2)

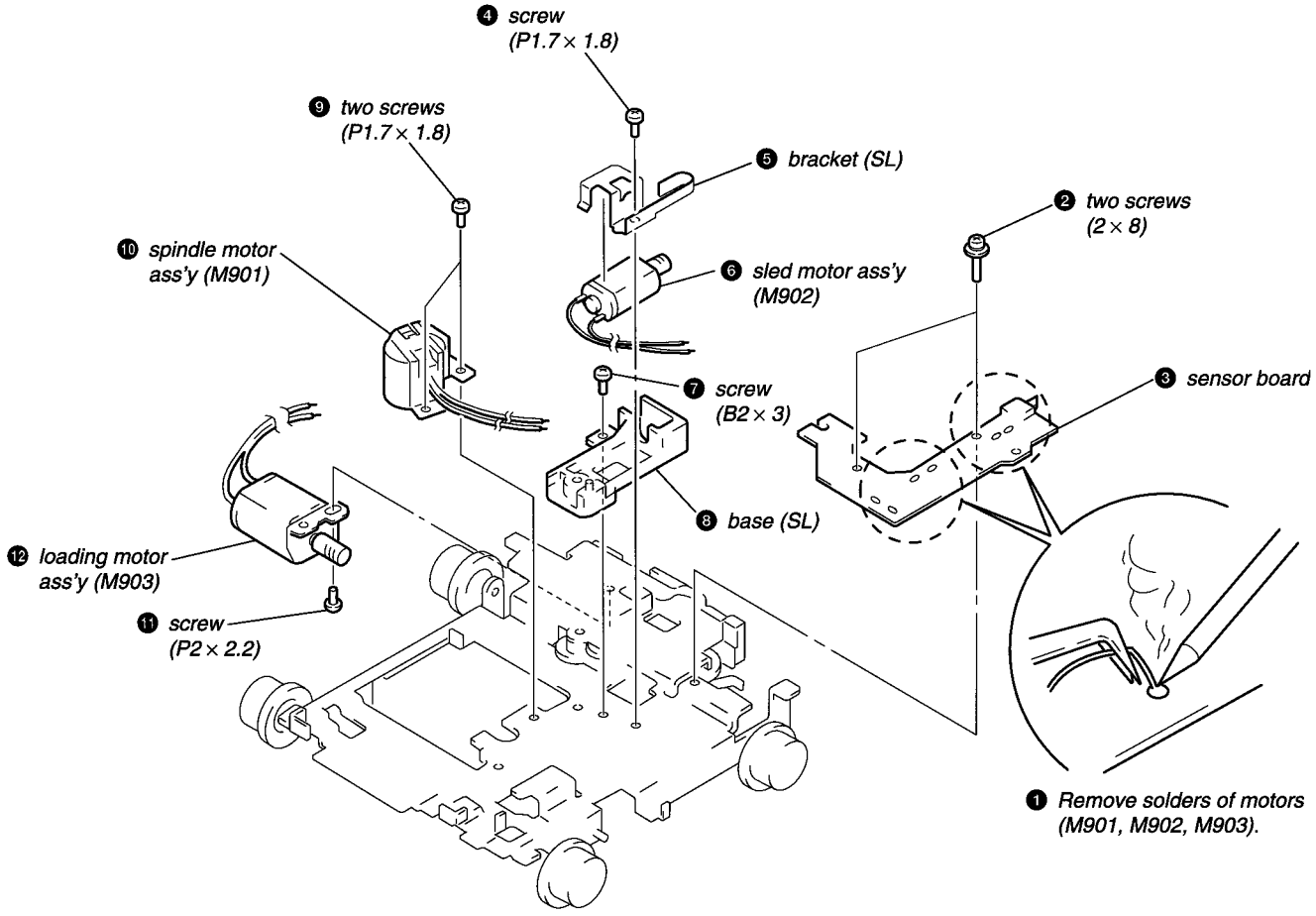
HOLDER ASS'Y



OPTICAL PICK-UP (KMS-241A/J2N)



MOTOR ASS'Y (M901, M902, M903), SENSOR BOARD


❹ screw (P1.7× 1.8)
❾ two screws (P1.7× 1.8)
❺ bracket (SL)
❷ two screws (2× 8)
❿ spindle motor ass'y (M901)
❻ sled motor ass'y (M902)
❸ sensor board
❼ screw (B2× 3)
❽ base (SL)
⓬ loading motor ass'y (M903)
⓫ screw (P2× 2.2)
❶ Remove solders of motors (M901, M902, M903).

SECTION 3
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and AM Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

<Set the Test Mode>

1. Set the "power select" switch (SW500) is "A (ON)" position.
2. Turn ON the regulated power supply. (All LEDs on the set lights up, and the clock is displayed.)
   Note: Press the [OFF] button, if the clock is not displayed.
3. Push the preset [4] button.
4. Push the preset [5] button.
5. Press the preset [1] button for more than two seconds.
6. Then the display indicates all lights, the test mode is set.

<Release the Test mode>

1. Push the [OFF] button.
2. Return the "power select" switch (SW500) to initially set position.

See the adjustment location from on page 25 for the adjustment.

MD SECTION

MD section adjustments are done automatically in this set.

TUNER SECTION

0 dB=1μV

Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

Note: Adjust the tuner section in the sequence shown below.

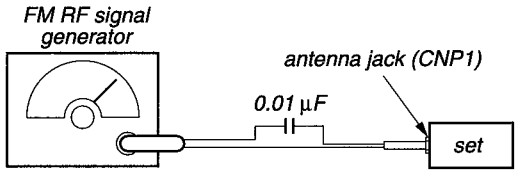
1. FM Auto Scan/Stop Level Adjustment
2. FM Stereo Separation Adjustment (Wide)
3. FM Stereo Separation Adjustment (Narrow)
4. AM Auto Scan/Stop Level Adjustment

FM Auto Scan/Stop Level Adjustment

Setting:

Band: FM

FREQUENCY SELECT switch (E model): FM 200 k

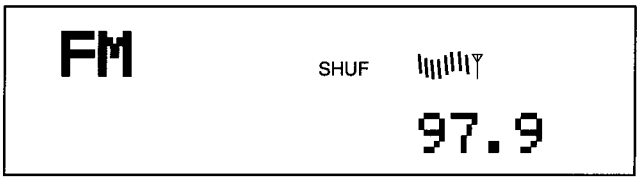


Carrier frequency : 97.9 MHz
Output level : 22 dB (12.6 μV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30%)

Procedure:

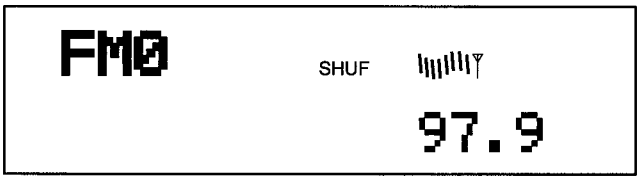
1. Set to the test mode.
2. Push the [SOURCE] button and set to FM.

Display



3. Adjust the volume RV2 on TU1 by turning clockwise untill "0" is shown next to "FM" on the display window, If "0" is already shown or the volume RV2 has been turned too far, turn it back counterclockwise untill "0" is disappeared once, then try this adjustment.

Display



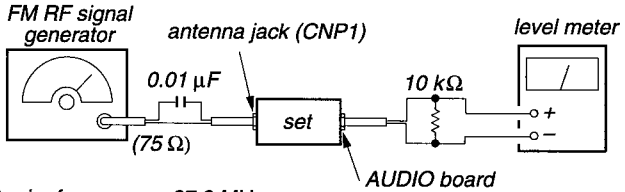
Adjustment Location: See page 25.

FM Stereo Separation Adjustment (Wide)

Setting:

Band: FM

FREQUENCY SELECT switch (E model): FM 200 k



AUDIO board LINE out (Front) terminal (CN801)

Carrier frequency : 97.9 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main: 1 kHz, 33.75 kHz deviation (45%)
sub : 1 kHz, 33.75 kHz deviation (45%)
19 kHz pilot: 7.5 kHz deviation (10%)

Procedure:

1. Adjust the volume RV3 on FM/AM tuner unit (TU1) for the best separation.

FM Stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
L-CH	R-CH	Ⓑ Adjust RV3 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
R-CH	L-CH	Ⓓ

L-CH Stereo separation: Ⓐ-Ⓑ
R-CH Stereo separation: Ⓒ-Ⓓ
The separations of both channels should be equal.

Specification: Separation more than 24 dB

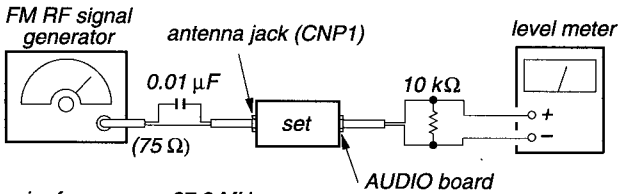
Adjustment Location: See page 25.

FM Stereo Separation Adjustment (Narrow)

Setting:

Band: FM

FREQUENCY SELECT switch (E model): FM 200 k



AUDIO board LINE out (Front) terminal (CN801)

Carrier frequency : 97.9 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main: 1 kHz, 20 kHz deviation (26.5%)
sub : 1 kHz, 20 kHz deviation (26.5%)
19 kHz pilot: 7.5 kHz deviation (10%)

Procedure:

1. Press [SHIFT] button.
2. Press [4] button three times.
3. Press [5] button twice.
4. Adjust the volume RV4 on FM/AM tuner unit (TU1) for the best separation.

FM Stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
L-CH	R-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
R-CH	L-CH	Ⓓ

L-CH Stereo separation: Ⓐ-Ⓑ
R-CH Stereo separation: Ⓒ-Ⓓ
The separations of both channels should be equal.

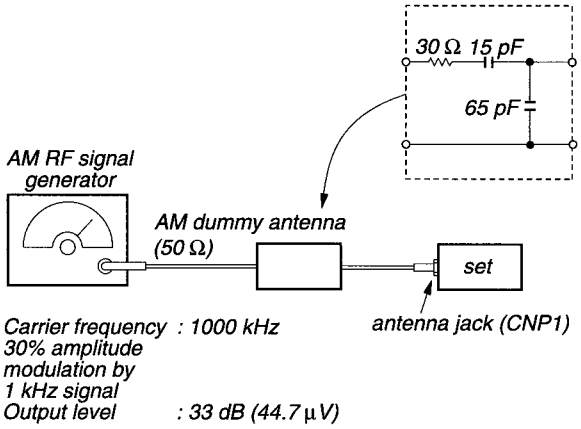
Specification: Separation more than 18 dB

Adjustment Location: See page 25.

AM Auto Scan/Stop Level Adjustment

Setting:

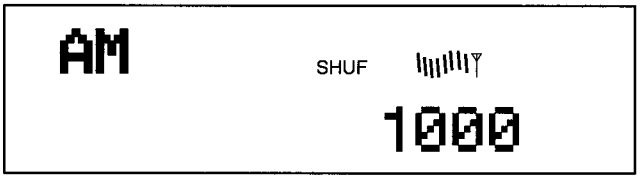
Band: AM
FREQUENCY SELECT switch (E model): AM 10 k


30 Ω 15 pF
65 pF
AM RF signal generator
AM dummy antenna (50 Ω)
set
antenna jack (CNP1)
Carrier frequency : 1000 kHz
30% amplitude modulation by 1 kHz signal
Output level : 33 dB (44.7 μV)

Procedure:

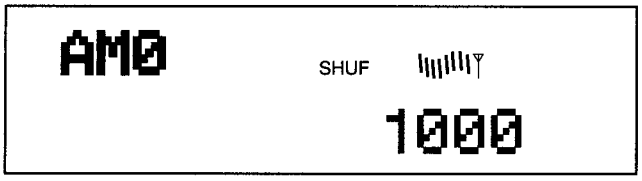
1. Set to the test mode. (See page 23.)
2. Push the [SOURCE] button and set to FM.
3. Push the [MODE] button and set to AM.

Display



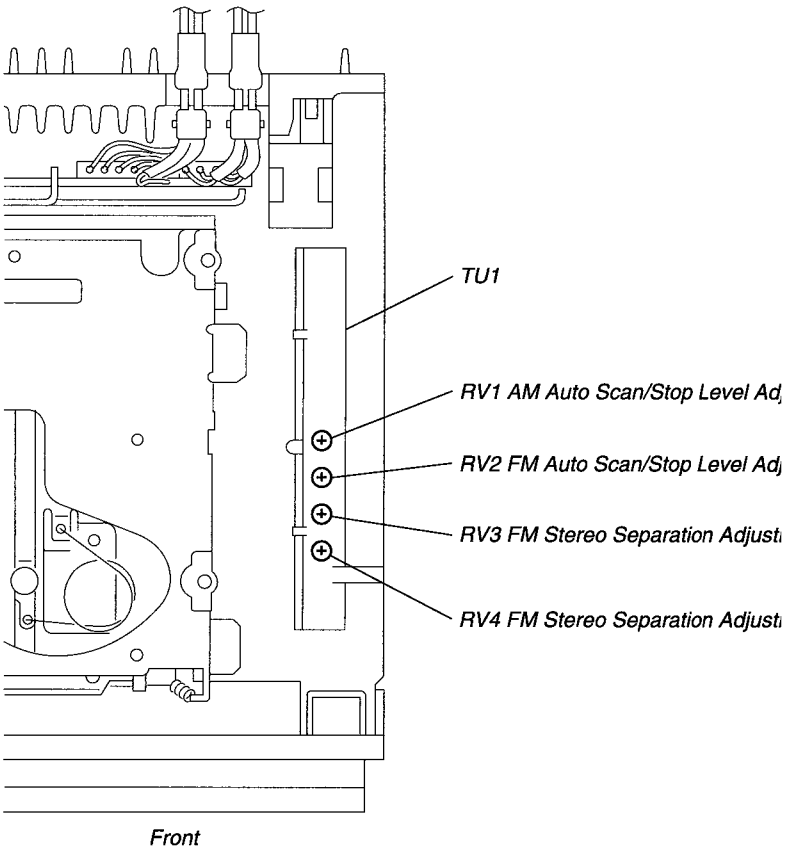
4. Adjust the volume RV1 on TU1 by turning clockwise untill "0" is shown next to "AM" on the display window, If "0" is already shown or the volume RV1 has been turned too far, turn it back counterclockwise untill "0" is disappeared once, then try this adjustment.

Display



Adjustment Location:

– SET UPPER VIEW –


TU1
RV1 AM Auto Scan/Stop Level Adj
RV2 FM Auto Scan/Stop Level Adj
RV3 FM Stereo Separation Adjusti
RV4 FM Stereo Separation Adjusti
Front

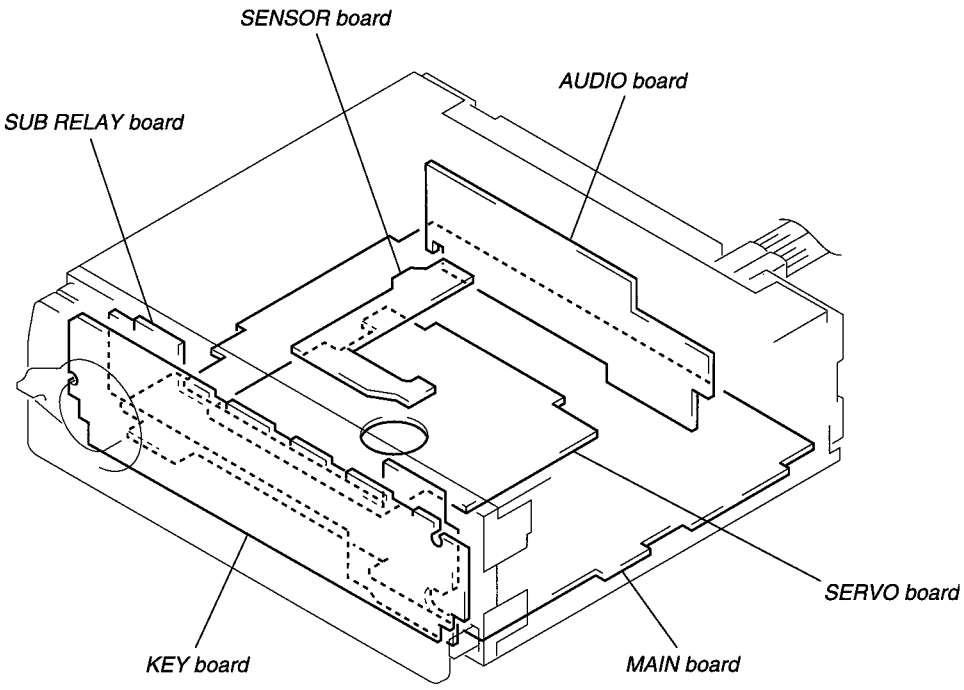
›vel Adjustment

›vel Adjustment

Adjustment (Wide)

Adjustment (Narrow)

• **Circuit Boards Location**



4-5. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : AM
  Σ : MD

Note on Printed Wiring Boards:

- o—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ● : Through hole.
- △ : internal component.
- ▒▒ : Pattern from the side which enables seeing.

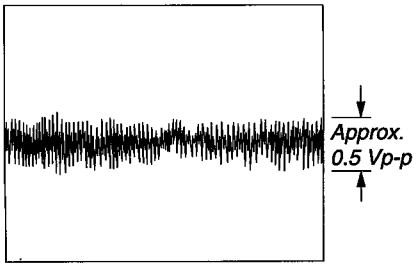
(The other layers' patterns are not indicated.)

Caution:

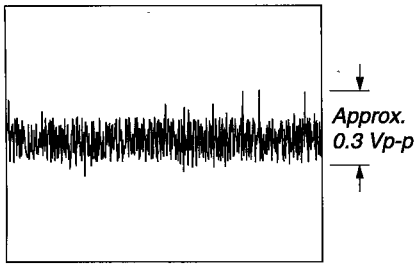
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

• Waveforms
– SERVO Board –

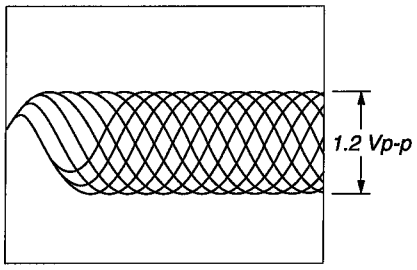
❶ IC302 ㉖ (TE) (PLAY MODE)



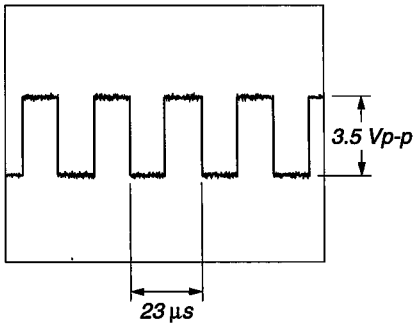
❷ IC302 ㉞ (FE) (PLAY MODE)



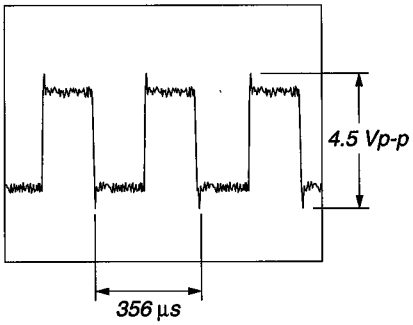
❸ IC302 ㊳ (RF) (PLAY MODE)



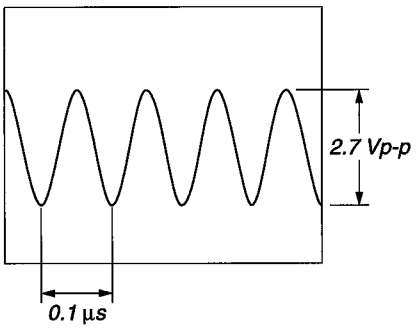
❹ IC301 ㉕ (LRCK) (PLAY MODE)



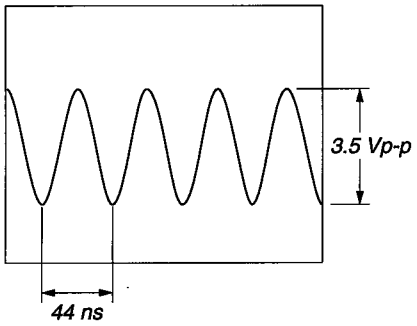
❺ IC301 ㉘ (XBCK) (PLAY MODE)



❻ IC501 ㉛ (EXTAL) (PLAY MODE)

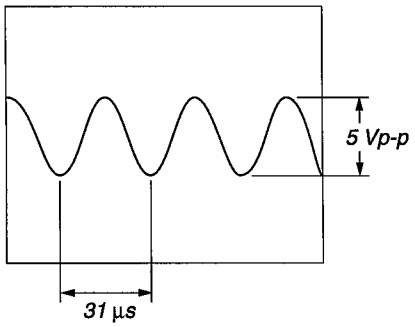


❼ IC304 ③ (IN) (PLAY MODE)

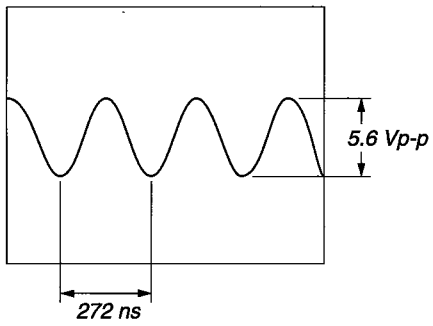


– MAIN Board –

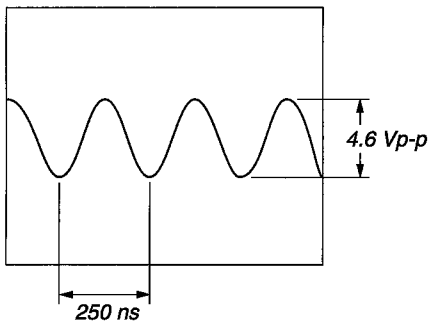
❶ IC500 ㉝ (X1A)



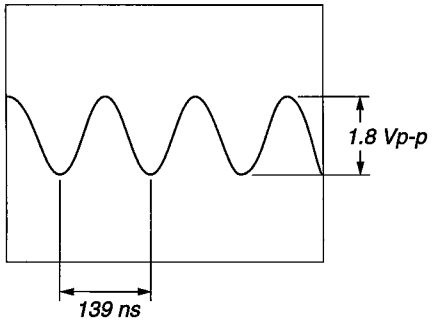
❷ IC500 ㊸ (X1)



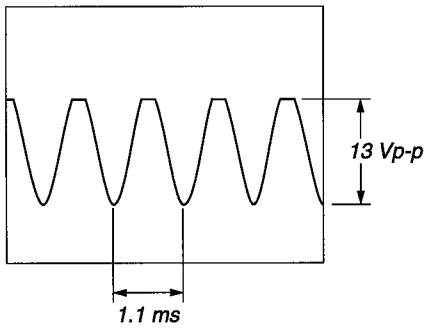
❸ IC502 ③ ($\overline{XT}$)



❹ IC4 ① (X IN) (RADIO MODE)

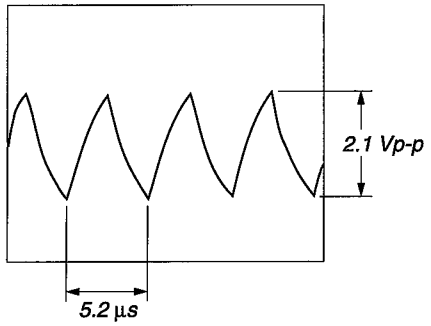


❺ Q510 (Base)



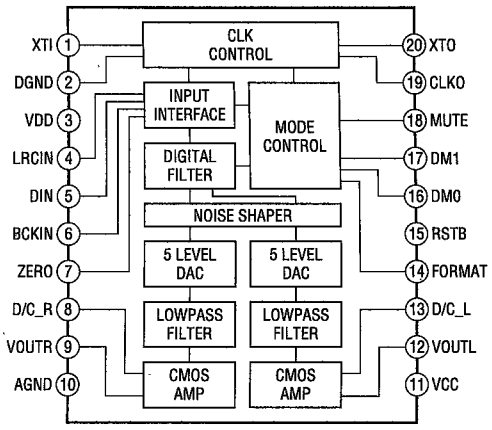
– KEY Board –

❶ IC900 ⑳ (OSC-IN)

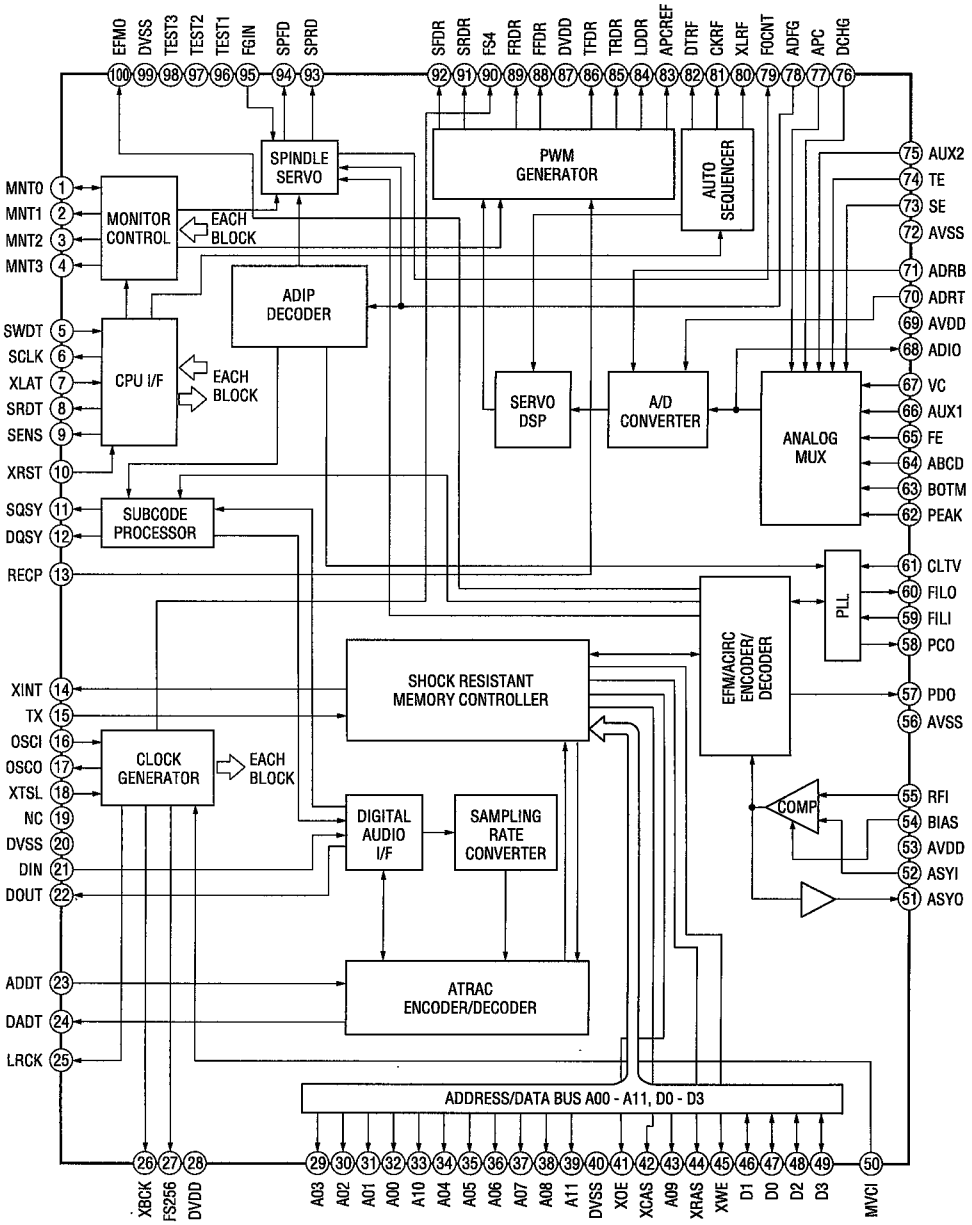


• IC Block Diagrams
– SERVO Board –

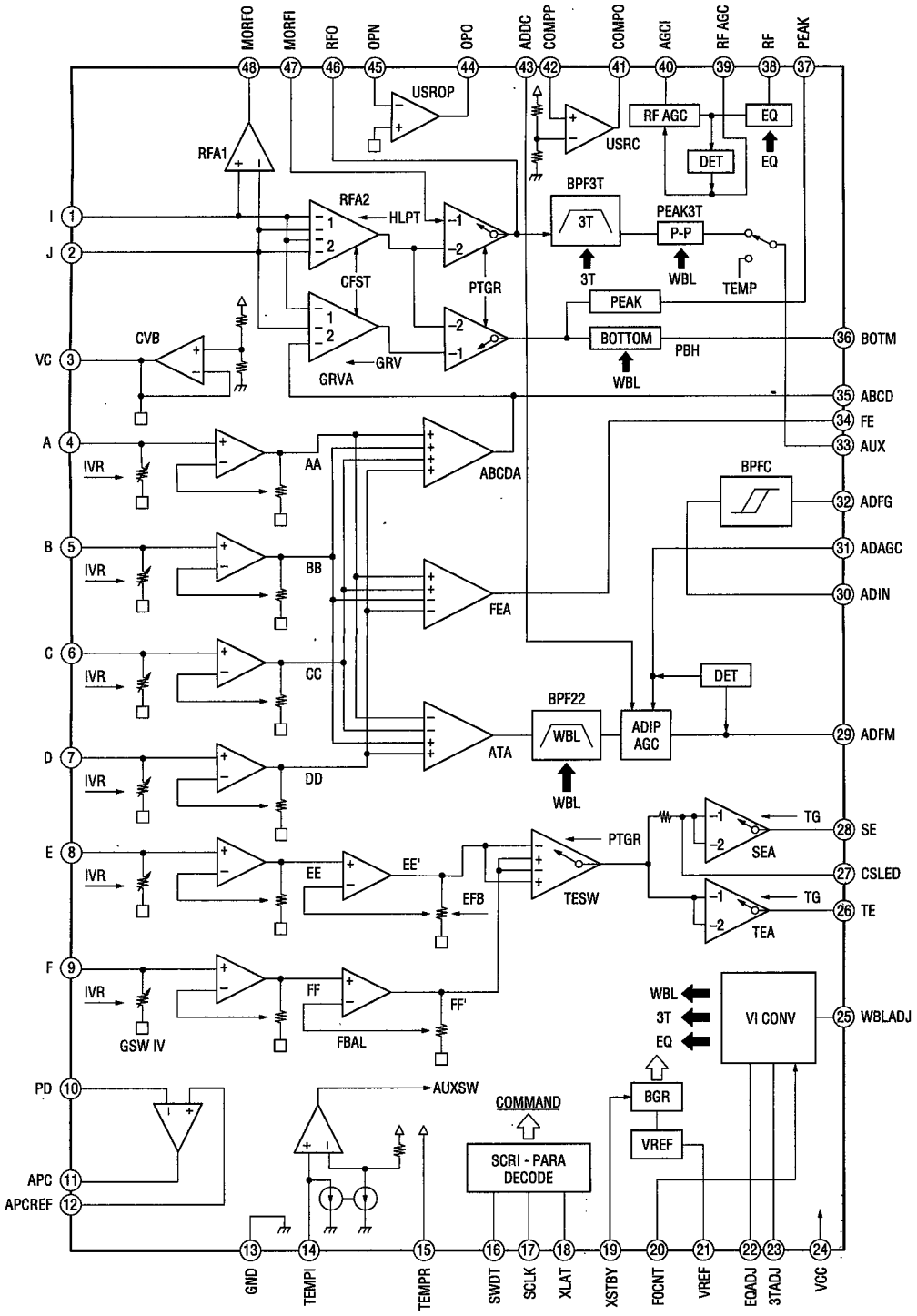
IC101 PCM1718E-T1



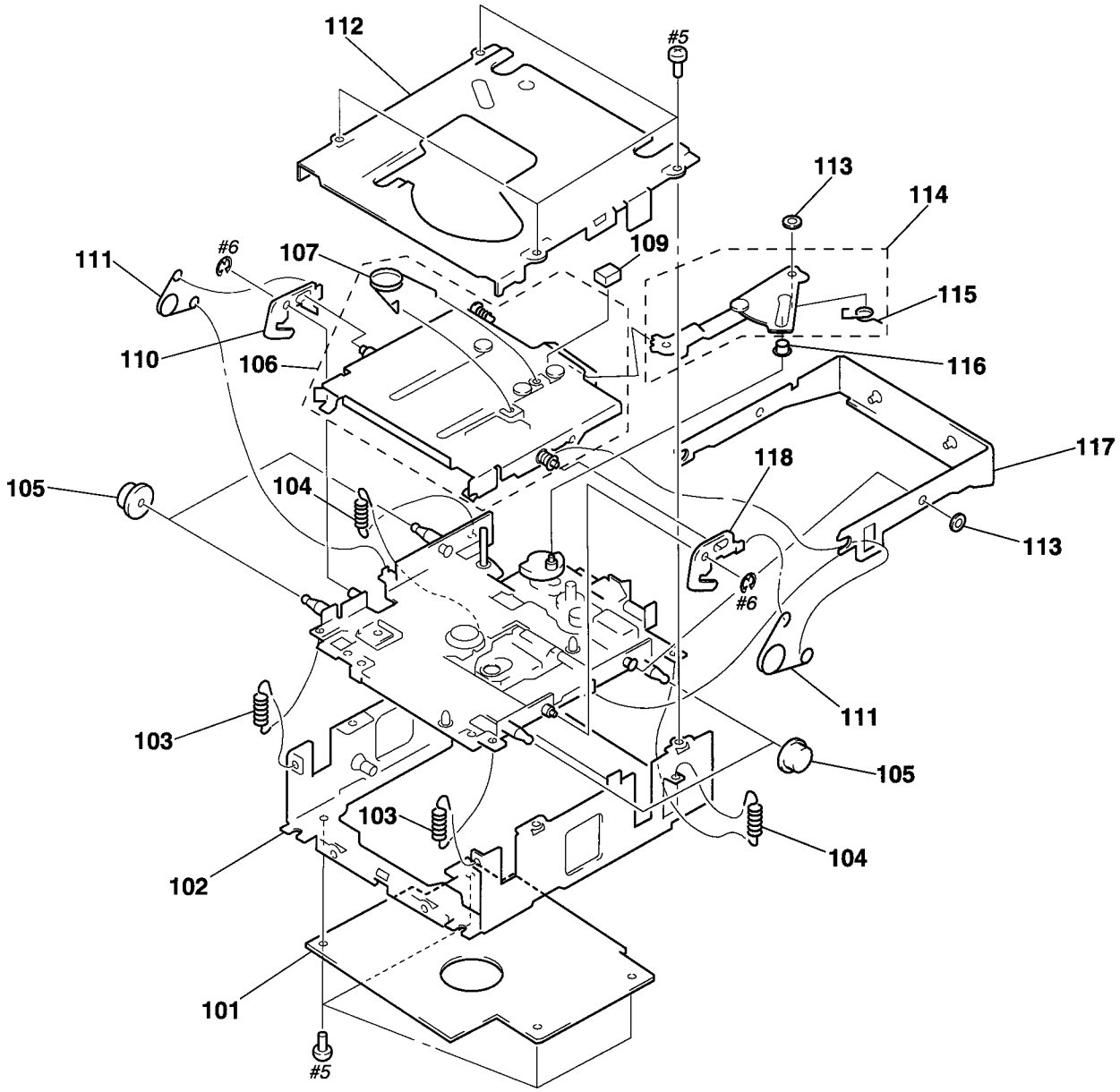
IC301 CXD2652AR



IC302 CXA2523R

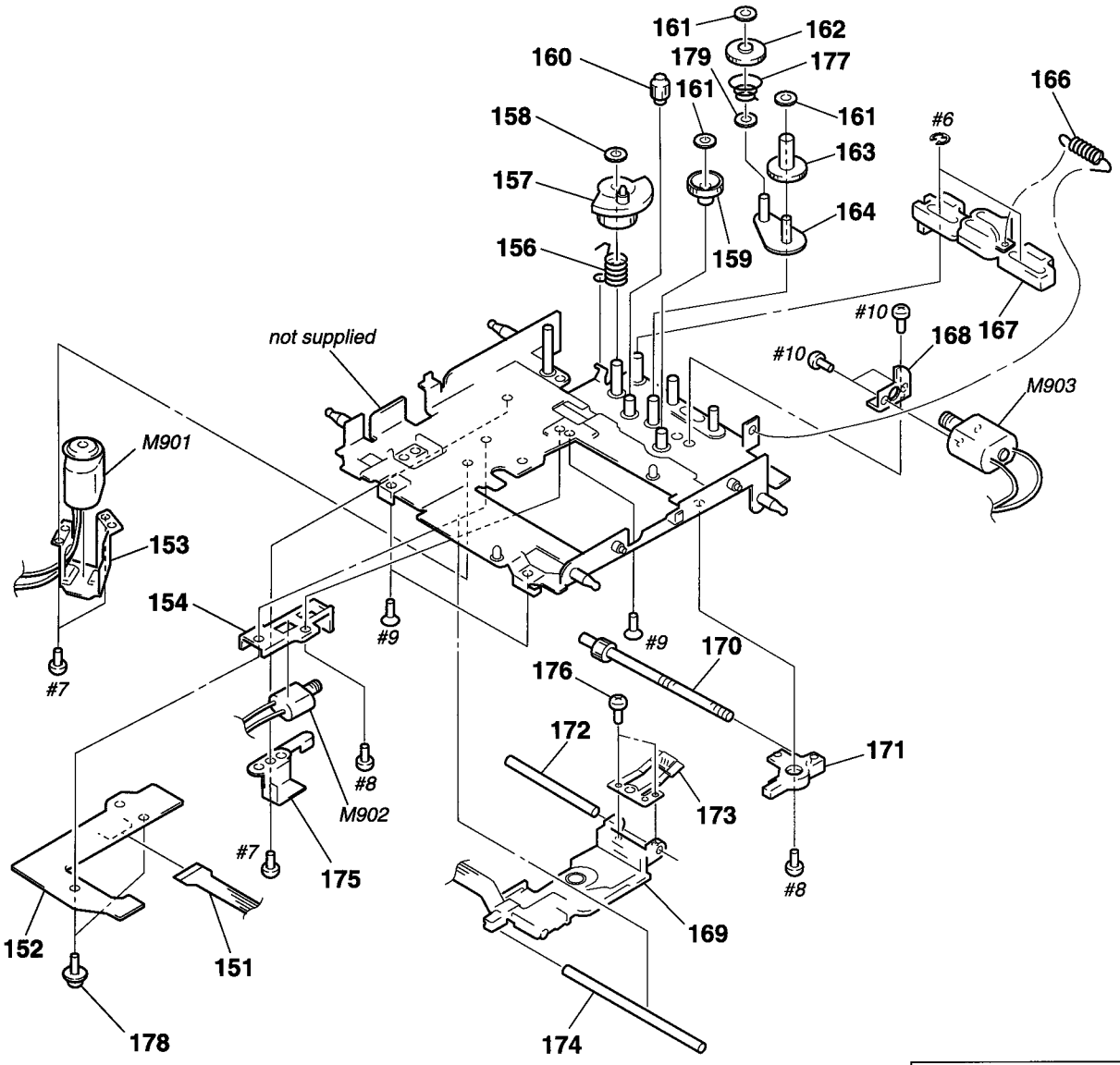


(3) MECHANISM DECK SECTION-1 (MG-164KS-138)



Ref. No.	Part No.	Description	Remark
* 101	A-3317-122-A	SERVO BOARD, COMPLETE	
* 102	X-3369-440-1	CHASSIS ASSY, MD	
103	3-919-296-01	SPRING (FL), TENSION	
104	3-921-111-01	SPRING (FL2), TENSION	
105	3-919-273-01	DAMPER, OIL	
* 106	X-3375-402-1	HOLDER ASSY (V)	
107	3-919-319-01	SPRING (HOLDER)	
* 109	3-919-436-01	CUSHION (EJ)	
* 110	3-919-280-01	LEVER (LOCK R)	
111	3-919-281-01	SPRING (CHKG)	
* 112	X-3375-444-1	COVER ASSY (2), MD	
113	3-342-940-01	WASHER (M)	
* 114	X-3375-443-1	LEVER (LE28) ASSY	
115	3-024-249-01	SPRING (LE2)	
116	3-925-034-01	ROLLER (GLE)	
* 117	X-3369-443-1	ARM ASSY, CHUCKING	
* 118	3-919-279-01	LEVER (LOCK L)	

(4) MECHANISM DECK SECTION-2 (MG-164KS-138)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
151	1-654-693-11	SENSOR FLEXIBLE BOARD	
152	A-3309-892-A	SENSOR BOARD, COMPLETE	
* 153	3-919-297-01	RETAINER (SP)	
* 154	3-919-284-01	BASE (SL)	
156	3-919-339-01	SPRING (GLE)	
157	3-919-317-01	GEAR (LE)	
158	4-926-562-01	WASHER, STOPPER	
159	3-919-313-01	WHEEL, WORM	
160	3-919-316-01	GEAR (R)	
161	3-342-940-01	WASHER (M)	
162	3-919-315-01	GEAR (S)	
163	3-919-314-01	GEAR (F)	
164	X-3369-446-1	LEVER (S) ASSY	
166	3-919-282-01	SPRING (RACK), TENSION	
167	X-3369-447-1	RACK ASSY	
* 168	3-919-312-01	BRACKET (MOTOR)	
⚠169	8-583-037-02	OPTICAL PICK-UP KMS-241A/J2RP	
170	X-3373-213-1	SCREW ASSY, FEED	
* 171	3-919-294-01	BEARING (SL)	
* 172	3-919-293-01	SHAFT (SL)	
173	3-010-091-01	SPRING (SL FEED)	
* 174	3-920-537-01	SHAFT (SL2)	
* 175	3-919-283-01	BRACKET (SL)	
176	3-703-816-32	SCREW (M1.4X1.6), SPECIAL HEAD	
177	3-924-721-01	SPRING (B-T)	
178	2-626-617-01	SCREW (2X8)	
179	3-701-437-01	WASHER	
M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)	
M902	A-3291-190-A	MOTOR ASSY, SL (SLED)	
M903	A-3291-191-A	MOTOR ASSY, LO (LOADING)	

AUDIO

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA.. : μA.. uPA.. : μPA..
  uPB.. : μPB.. uPC.. : μPC..
  uPD.. : μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3294-454-A	AUDIO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C801	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C802	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C803	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C804	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C805	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C806	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C807	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C808	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C809	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C810	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C811	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C812	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C813	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C814	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C815	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C816	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C817	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C818	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C819	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C820	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C821	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C822	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C823	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C824	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C825	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C826	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C827	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C828	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C829	1-164-346-11	CERAMIC CHIP	1uF		16V
C830	1-164-346-11	CERAMIC CHIP	1uF		16V
C831	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C832	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C833	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C834	1-117-681-11	ELECT CHIP	100uF	20%	16V
C835	1-164-346-11	CERAMIC CHIP	1uF		16V
C836	1-164-346-11	CERAMIC CHIP	1uF		16V
C837	1-117-681-11	ELECT CHIP	100uF	20%	16V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
* CN801	1-564-521-11	PLUG, CONNECTOR 6P			
* CN802	1-564-521-11	PLUG, CONNECTOR 6P			
CN803	1-779-855-11	CONNECTOR, BOARD TO BOARD 20P			
		< DIODE >			
D801	8-719-421-24	DIODE MA8039-H			
D802	8-719-421-24	DIODE MA8039-H			
		< IC >			
IC801	8-759-262-37	IC TA2050F (EL)			
IC802	8-759-262-37	IC TA2050F (EL)			
		< TRANSISTOR >			
Q801	8-729-920-21	TRANSISTOR DTC314TKH04			
Q802	8-729-920-21	TRANSISTOR DTC314TKH04			
Q803	8-729-920-21	TRANSISTOR DTC314TKH04			
Q804	8-729-920-21	TRANSISTOR DTC314TKH04			
		< RESISTOR >			
R801	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R802	1-216-033-00	METAL CHIP	220	5%	1/10W
R803	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R804	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R805	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R806	1-216-033-00	METAL CHIP	220	5%	1/10W
R807	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R808	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R809	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R810	1-216-033-00	METAL CHIP	220	5%	1/10W
R811	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R812	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R813	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R814	1-216-033-00	METAL CHIP	220	5%	1/10W
R815	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R816	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R817	1-216-033-00	METAL CHIP	220	5%	1/10W
R818	1-216-081-00	METAL CHIP	22K	5%	1/10W
R819	1-216-033-00	METAL CHIP	220	5%	1/10W
R820	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R821	1-216-033-00	METAL CHIP	220	5%	1/10W
R822	1-216-081-00	METAL CHIP	22K	5%	1/10W
R823	1-216-033-00	METAL CHIP	220	5%	1/10W
R824	1-216-081-00	METAL CHIP	22K	5%	1/10W
**********					
		KEY BOARD			
		**********			
	1-694-414-11	CONDUCTOR BOARD, CONNENTION			
	3-017-983-01	CUSHION (10)			
*	3-022-326-01	PLATE (LCD), LIGHT GUIDE			
*	3-022-327-01	PLATE (LCD), GROUND			
*	3-022-328-01	ILLUMINATOR (LCD)			
	3-327-119-01	SPACER (A)			
		< CAPACITOR >			
C900	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C901	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C902	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< CONNECTOR >			
CN900	1-778-183-11	PLUG, CONNECTOR 18P			
		< DIODE >			
D901	8-719-420-90	DIODE MA8051-M			
D903	8-719-420-90	DIODE MA8051-M			
		< EL LUMINOUS ELEMENT >			
EL900	1-517-766-11	LIGHT, ELECTRO LUMINESCENT			
		< IC >			
IC900	8-759-496-75	IC uPD16432BGC-018-9EU			
IC901	8-749-012-25	IC RS-170-TU			
		< JUMPER RESISTOR >			
JW900	1-216-295-00	SHORT 0			
		< LIQUID CRYSTAL DISPLAY >			
LCD900	1-803-107-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< LED >			
LED900	8-719-987-45	LED CL-155Y/PG-CD (ILLUMINATION)			
LED901	8-719-987-45	LED CL-155Y/PG-CD (ILLUMINATION)			
LED902	8-719-987-45	LED CL-155Y/PG-CD (ILLUMINATION)			
LED903	8-719-987-45	LED CL-155Y/PG-CD (ILLUMINATION)			
LED904	8-719-987-45	LED CL-155Y/PG-CD (ILLUMINATION)			
LED905	8-719-987-45	LED CL-155Y/PG-CD (ILLUMINATION)			
LED906	8-719-033-13	LED CL-170Y-CD-T (ILLUMINATION)			
LED907	8-719-033-14	LED CL-170PG-CD-T (ILLUMINATION)			
		< SWITCH >			
LSW900	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (OFF)			
LSW901	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (MODE)			
LSW902	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (SOURCE)			
LSW903	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (SOUND)			
LSW904	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (DSPL)			
LSW905	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (SHIFT)			
LSW906	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (1)			
LSW907	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (2)			
LSW908	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (3)			
LSW909	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (LIST)			
LSW912	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (10)			
LSW913	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (9)			
LSW914	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (8)			
LSW915	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (7)			
LSW916	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (6)			
LSW917	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (5)			
LSW918	1-762-620-11	SWITCH, KEY BOARD (WITH LED) (4)			
		< TRANSISTOR >			
Q900	8-729-904-66	TRANSISTOR DTD113EK			
Q901	8-729-904-66	TRANSISTOR DTD113EK			
Q902	8-729-424-08	TRANSISTOR UN2111			
Q903	8-729-424-08	TRANSISTOR UN2111			
		< RESISTOR >			
R901	1-216-045-00	METAL CHIP	680	5%	1/10W
R902	1-216-045-00	METAL CHIP	680	5%	1/10W
R903	1-216-045-00	METAL CHIP	680	5%	1/10W
R904	1-216-049-11	RES, CHIP	1K	5%	1/10W
R905	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R906	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R907	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R908	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R909	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R910	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R911	1-216-045-00	METAL CHIP	680	5%	1/10W
R912	1-216-045-00	METAL CHIP	680	5%	1/10W
R913	1-216-045-00	METAL CHIP	680	5%	1/10W
R914	1-216-049-11	RES, CHIP	1K	5%	1/10W
R915	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R916	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R917	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R918	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R919	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R920	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R931	1-216-037-00	METAL CHIP	330	5%	1/10W
R932	1-216-041-00	METAL CHIP	470	5%	1/10W
R933	1-216-037-00	METAL CHIP	330	5%	1/10W
R935	1-216-182-00	RES, CHIP	220	5%	1/8W
R936	1-216-182-00	RES, CHIP	220	5%	1/8W
R937	1-216-037-00	METAL CHIP	330	5%	1/10W
R938	1-216-037-00	METAL CHIP	330	5%	1/10W
R939	1-216-194-00	METAL CHIP	680	5%	1/8W
R941	1-216-025-00	RES, CHIP	100	5%	1/10W
R942	1-216-041-00	METAL CHIP	470	5%	1/10W
R943	1-216-025-00	RES, CHIP	100	5%	1/10W
R944	1-216-041-00	METAL CHIP	470	5%	1/10W
R945	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R946	1-216-089-00	RES, CHIP	47K	5%	1/10W
R947	1-216-089-00	RES, CHIP	47K	5%	1/10W
R948	1-216-049-11	RES, CHIP	1K	5%	1/10W
R949	1-216-049-11	RES, CHIP	1K	5%	1/10W

KEY **MAIN**

Ref. No.	Part No.	Description			Remark
R950	1-216-049-11	RES, CHIP	1K	5%	1/10W
R951	1-216-049-11	RES, CHIP	1K	5%	1/10W
R952	1-216-093-00	METAL CHIP	68K	5%	1/10W
R953	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R954	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R955	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R956	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R957	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R958	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R960	1-216-025-00	RES, CHIP	100	5%	1/10W
R961	1-216-025-00	RES, CHIP	100	5%	1/10W
R962	1-216-025-00	RES, CHIP	100	5%	1/10W
R963	1-216-025-00	RES, CHIP	100	5%	1/10W
		< ROTARY ENCODER >			
RE900	1-475-014-11	ENCODER, ROTARY (VOLUME/BASS/TREBLE/ BALANCE/FADER CONTROL)			
		< SWITCH >			
S900	1-771-290-11	SWITCH, SLIDE (– ◀◀ I◀◀ SEEK/AMS ▶▶I ▶▶ +)			
**********					
*	A-3294-452-A	MAIN BOARD, COMPLETE (US)			
*	A-3294-453-A	MAIN BOARD, COMPLETE (E)			
		**********			
*	3-011-078-01	BRACKET (POWER IC)			
*	3-022-317-01	BRACKET (AMP)			
*	3-025-481-01	HEAT SINK			
*	3-026-537-01	BRACKET (AUDIO)			
*	3-937-122-01	HEAT SINK			
	7-685-792-09	SCREW +PTT 2.6X6 (S)			
	7-685-794-09	SCREW +PTT 2.6X10 (S)			
		< BUZZER >			
BZ501	1-504-920-11	BUZZER			
		< CAPACITOR >			
C12	1-104-683-11	MYLAR	0.0047uF	5%	50V
C13	1-136-169-00	FILM	0.22uF	5%	50V
C16	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C17	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C18	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C19	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C22	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C26	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C27	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C29	1-117-681-11	ELECT CHIP	100uF	20%	16V
C30	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C31	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C32	1-128-394-11	ELECT CHIP	220uF	20%	10V
C33	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C35	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C36	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C37	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C38	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C39	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (US)

Ref. No.	Part No.	Description			Remark
C39	1-163-024-00	CERAMIC CHIP	0.018uF	10%	25V (E)
C40	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (US)
C40	1-163-024-00	CERAMIC CHIP	0.018uF	10%	25V (E)
C42	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C43	1-126-395-11	ELECT	22uF	20%	16V
C44	1-117-681-11	ELECT CHIP	100uF	20%	16V
C45	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C46	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C47	1-117-681-11	ELECT CHIP	100uF	20%	16V
C48	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C49	1-117-681-11	ELECT CHIP	100uF	20%	16V
C52	1-126-204-11	ELECT CHIP	47uF	20%	16V
C93	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C94	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C100	1-126-767-11	ELECT	1000uF	20%	16V
C101	1-128-390-11	ELECT CHIP	220uF	20%	6.3V
C102	1-117-681-11	ELECT CHIP	100uF	20%	16V
C103	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C104	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C105	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C106	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C107	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C108	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C109	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C110	1-126-200-11	ELECT CHIP	10uF	20%	35V
C111	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C113	1-163-259-00	CERAMIC CHIP	220PF	5%	50V
C114	1-163-259-00	CERAMIC CHIP	220PF	5%	50V
C200	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C201	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C202	1-164-346-11	CERAMIC CHIP	1uF		16V
C203	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C204	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C205	1-126-200-11	ELECT CHIP	10uF	20%	35V
C206	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C207	1-126-200-11	ELECT CHIP	10uF	20%	35V
C208	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C209	1-126-395-11	ELECT	22uF	20%	16V
C210	1-126-395-11	ELECT	22uF	20%	16V
C211	1-126-204-11	ELECT CHIP	47uF	20%	16V
C212	1-117-681-11	ELECT CHIP	100uF	20%	16V
C213	1-117-681-11	ELECT CHIP	100uF	20%	16V
C214	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C215	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C216	1-126-200-11	ELECT CHIP	10uF	20%	35V
C217	1-126-200-11	ELECT CHIP	10uF	20%	35V
C228	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C229	1-126-395-11	ELECT	22uF	20%	16V
C230	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C231	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C232	1-124-779-00	ELECT CHIP	10uF	20%	16V
C235	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C237	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C300	1-164-506-11	CERAMIC CHIP	4.7uF		16V

Ref. No.	Part No.	Description			Remark
C301	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C302	1-164-346-11	CERAMIC CHIP	1uF		16V
C303	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C304	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C305	1-126-200-11	ELECT CHIP	10uF	20%	35V
C306	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C307	1-126-200-11	ELECT CHIP	10uF	20%	35V
C308	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C309	1-126-395-11	ELECT	22uF	20%	16V
C310	1-126-395-11	ELECT	22uF	20%	16V
C311	1-126-204-11	ELECT CHIP	47uF	20%	16V
C312	1-117-681-11	ELECT CHIP	100uF	20%	16V
C313	1-117-681-11	ELECT CHIP	100uF	20%	16V
C314	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C315	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C316	1-126-200-11	ELECT CHIP	10uF	20%	35V
C317	1-126-200-11	ELECT CHIP	10uF	20%	35V
C328	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C329	1-126-395-11	ELECT	22uF	20%	16V
C330	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C331	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C332	1-124-779-00	ELECT CHIP	10uF	20%	16V
C335	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C336	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C400	1-126-395-11	ELECT	22uF	20%	16V
C401	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C402	1-126-395-11	ELECT	22uF	20%	16V
C403	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C404	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C407	1-117-681-11	ELECT CHIP	100uF	20%	16V
C408	1-164-346-11	CERAMIC CHIP	1uF		16V
C409	1-164-346-11	CERAMIC CHIP	1uF		16V
C411	1-124-779-00	ELECT CHIP	10uF	20%	16V
C415	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C416	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C417	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C418	1-126-395-11	ELECT	22uF	20%	16V
C419	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C421	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C427	1-126-200-11	ELECT CHIP	10uF	20%	35V
C428	1-126-200-11	ELECT CHIP	10uF	20%	35V
C429	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C430	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C431	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C432	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C433	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C434	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C435	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C436	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C437	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C438	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C439	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C440	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C441	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C442	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C443	1-124-779-00	ELECT CHIP	10uF	20%	16V
C447	1-124-779-00	ELECT CHIP	10uF	20%	16V

Ref. No.	Part No.	Description			Remark
C500	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C501	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C502	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C503	1-163-091-00	CERAMIC CHIP	8PF		50V
C504	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C505	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C506	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C507	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C508	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C509	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C510	1-128-394-11	ELECT CHIP	220uF	20%	10V
C511	1-124-779-00	ELECT CHIP	10uF	20%	16V
C512	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C513	1-124-779-00	ELECT CHIP	10uF	20%	16V
C514	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C515	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C516	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C518	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C519	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C520	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C521	1-124-779-00	ELECT CHIP	10uF	20%	16V
C522	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C523	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C524	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C525	1-125-710-11	DOUBLE LAYER	0.1F		5.5V
C526	1-117-681-11	ELECT CHIP	100uF	20%	16V
C527	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C528	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C531	1-111-233-11	ELECT	5600uF	20%	16V
C532	1-163-021-00	CERAMIC CHIP	0.01uF	10%	50V
C534	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C535	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C536	1-124-779-00	ELECT CHIP	10uF	20%	16V
C537	1-124-779-00	ELECT CHIP	10uF	20%	16V
C538	1-124-779-00	ELECT CHIP	10uF	20%	16V
C539	1-124-779-00	ELECT CHIP	10uF	20%	16V
C540	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C541	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C542	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C543	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C551	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C554	1-126-204-11	ELECT CHIP	47uF	20%	16V
C615	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C616	1-128-400-11	ELECT CHIP	47uF	20%	25V
C777	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

< CONNECTOR/JACK >

CN101	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P
CN401	1-779-856-21	CONNECTOR, BOARD TO BOARD 20P
CN500	1-770-411-11	CONNECTOR, BOARD TO BOARD 20P
CN501	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)
CN502	1-778-293-11	PLUG (MICRO CONNECTOR) 2P
CN503	1-778-293-11	PLUG (MICRO CONNECTOR) 2P
CNJ500	1-566-822-41	JACK (REMOTE IN)
CNP1	1-764-808-21	JACK (ANT)
CNP500	1-774-701-11	PIN, CONNECTOR 16P

MAIN

Ref. No.	Part No.	Description	Remark
		< CONPOSITION CIRCUIT BLOCK >	
CP1	1-519-504-11	GAP, DISCHARGE	
		< DIODE >	
D5	8-719-977-03	DIODE DTZ5.6B	
D6	8-719-981-59	DIODE FC805	
D7	8-719-421-24	DIODE MA8039-H	
D31	8-719-422-97	DIODE MA8091-M	
D100	8-719-423-32	DIODE MA8120-M	
D101	8-719-313-73	DIODE SFPB-52	
D401	8-719-422-97	DIODE MA8091-M	
D402	8-719-421-24	DIODE MA8039-H	
D403	8-719-421-24	DIODE MA8039-H	
D405	8-719-404-49	DIODE MA111	
D406	8-719-404-49	DIODE MA111	
D407	8-719-404-49	DIODE MA111	
D500	8-719-404-49	DIODE MA111	
D501	8-719-404-49	DIODE MA111	
D502	8-719-941-09	DIODE DAP202U	
D503	8-719-941-09	DIODE DAP202U	
D504	8-719-423-23	DIODE MA8110-M	
D505	8-719-404-49	DIODE MA111	
D506	8-719-423-32	DIODE MA8120-M	
D507	8-719-422-97	DIODE MA8091-M	
D508	8-719-422-31	DIODE MA8047-M	
D509	8-719-404-49	DIODE MA111	
D510	8-719-977-12	DIODE DTZ6.8B	
D511	8-719-977-12	DIODE DTZ6.8B	
D512	8-719-977-12	DIODE DTZ6.8B	
D513	8-719-977-12	DIODE DTZ6.8B	
D514	8-719-977-12	DIODE DTZ6.8B	
D515	8-719-977-12	DIODE DTZ6.8B	
D516	8-719-977-12	DIODE DTZ6.8B	
D517	8-719-977-12	DIODE DTZ6.8B	
D518	8-719-977-12	DIODE DTZ6.8B	
D519	8-719-977-12	DIODE DTZ6.8B	
D520	8-719-977-12	DIODE DTZ6.8B	
D521	8-719-977-12	DIODE DTZ6.8B	
D522	8-719-801-78	DIODE 1SS184	
D523	8-719-977-12	DIODE DTZ6.8B	
D524	8-719-022-90	DIODE MA8160M	
D525	8-719-801-78	DIODE 1SS184	
D526	8-719-977-12	DIODE DTZ6.8B	
D527	8-719-067-56	DIODE MA112-TX	
D528	8-719-017-67	DIODE MA8068-H	
D529	8-719-404-49	DIODE MA111	
D530	8-719-977-12	DIODE DTZ6.8B	
D531	8-719-022-90	DIODE MA8160M	
D533	8-719-404-49	DIODE MA111	
D534	8-719-049-38	DIODE 1N5404TU	
D535	8-719-057-80	DIODE MA8160-M-TX	
D536	8-719-057-80	DIODE MA8160-M-TX	
D537	8-719-057-80	DIODE MA8160-M-TX	
D538	8-719-977-12	DIODE DTZ6.8B	
D539	8-719-404-49	DIODE MA111	
D540	8-719-022-90	DIODE MA8160M	
D541	8-719-053-18	DIODE 1SR154-400TE-25	
D542	8-719-053-18	DIODE 1SR154-400TE-25	
D543	8-719-977-12	DIODE DTZ6.8B	
D544	8-719-422-49	DIODE MA8056-L	
D545	8-719-420-51	DIODE MA729	
D546	8-719-404-49	DIODE MA111	
D601	8-719-053-18	DIODE 1SR154-400TE-25	
D602	8-719-053-18	DIODE 1SR154-400TE-25	
D603	8-719-053-18	DIODE 1SR154-400TE-25	
D604	8-719-053-18	DIODE 1SR154-400TE-25	
D605	8-719-053-18	DIODE 1SR154-400TE-25	
D606	8-719-053-18	DIODE 1SR154-400TE-25	
D607	8-719-053-18	DIODE 1SR154-400TE-25	
D608	8-719-053-18	DIODE 1SR154-400TE-25	
D701	8-719-022-90	DIODE MA8160M	
		< IC >	
IC4	8-759-448-85	IC BU2624FV-E2	
IC100	8-759-700-94	IC NJM5532M	
IC101	8-759-337-67	IC NJM2360AM (TE2)	
IC200	8-759-444-50	IC TDA8574 (T)	
IC300	8-759-444-50	IC TDA8574 (T)	
IC400	8-752-082-16	IC CXA1946BR	
IC401	8-759-711-82	IC NJM4580E	
IC402	8-759-711-82	IC NJM4580E	
IC403	8-752-083-07	IC CXA1846AN-T4	
IC404	8-759-711-82	IC NJM4580E	
IC405	8-759-242-66	IC TC4W66F	
IC409	8-759-537-12	IC NJM2150AM-TE2	
IC411	8-759-711-82	IC NJM4580E	
IC500	8-759-541-66	IC MB90574PFV-G-130-BND	
IC501	8-759-495-75	IC NJM317F	
IC502	8-759-530-58	IC MSM6654A-519GS-KR1	
IC503	8-759-495-76	IC RN5VD33AA-TL	
IC504	8-759-449-89	IC BA8270F-E2	
IC505	8-759-443-41	IC RH5VL40AA-T1C	
IC506	8-759-347-50	IC BA3918-V3	
IC600	8-759-486-44	IC TDA7386	
		< COIL >	
L3	1-412-060-11	INDUCTOR CHIP 22uH	
L6	1-412-055-11	INDUCTOR CHIP 3.3uH	
L7	1-412-055-11	INDUCTOR CHIP 3.3uH	
L100	1-412-533-21	INDUCTOR 47uH	
L101	1-412-537-31	INDUCTOR 100uH	
L102	1-412-533-21	INDUCTOR 47uH	
L103	1-412-055-11	INDUCTOR CHIP 3.3uH	
L500	1-412-060-11	INDUCTOR CHIP 22uH	
L501	1-412-060-11	INDUCTOR CHIP 22uH	
L502	1-416-712-21	COIL, CHOKE	
L503	1-412-537-31	INDUCTOR 100uH	
L504	1-412-060-11	INDUCTOR CHIP 22uH	
		< IC LINK >	
PS500	1-533-829-21	FUSE, CHIP	

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-020-67	TRANSISTOR XN1A312-TX	
Q2	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q3	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q5	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q6	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q9	8-729-920-21	TRANSISTOR DTC314TKH04	
Q10	8-729-920-21	TRANSISTOR DTC314TKH04	
Q11	8-729-920-21	TRANSISTOR DTC314TKH04	
Q12	8-729-020-67	TRANSISTOR XN1A312-TX	
Q13	8-729-020-67	TRANSISTOR XN1A312-TX	
Q14	8-729-421-22	TRANSISTOR UN2211	
Q100	8-729-106-60	TRANSISTOR 2SB1115A	
Q101	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q102	8-729-807-12	TRANSISTOR 2SD1802-S	
Q103	8-729-020-67	TRANSISTOR XN1A312-TX	
Q200	8-729-400-55	TRANSISTOR 2SD1328-S	
Q201	8-729-400-55	TRANSISTOR 2SD1328-S	
Q202	8-729-400-55	TRANSISTOR 2SD1328-S	
Q203	8-729-400-55	TRANSISTOR 2SD1328-S	
Q206	8-729-920-21	TRANSISTOR DTC314TKH04	
Q207	8-729-920-21	TRANSISTOR DTC314TKH04	
Q300	8-729-400-55	TRANSISTOR 2SD1328-S	
Q301	8-729-400-55	TRANSISTOR 2SD1328-S	
Q306	8-729-920-21	TRANSISTOR DTC314TKH04	
Q307	8-729-920-21	TRANSISTOR DTC314TKH04	
Q400	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q401	8-729-020-67	TRANSISTOR XN1A312-TX	
Q402	8-729-421-22	TRANSISTOR UN2211	
Q403	8-729-421-19	TRANSISTOR UN2213	
Q404	8-729-020-67	TRANSISTOR XN1A312-TX	
Q405	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q501	8-729-020-67	TRANSISTOR XN1A312-TX	
Q502	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q504	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q505	8-729-020-67	TRANSISTOR XN1A312-TX	
Q506	8-729-807-12	TRANSISTOR 2SD1802-S	
Q507	8-729-106-60	TRANSISTOR 2SB1115A	
Q508	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q509	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q510	8-729-807-12	TRANSISTOR 2SD1802-S	
Q511	8-729-106-60	TRANSISTOR 2SB1115A	
Q512	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q513	8-729-807-12	TRANSISTOR 2SD1802-S	
Q514	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q515	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q516	8-729-421-22	TRANSISTOR UN2211	
Q517	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q518	8-729-822-84	TRANSISTOR 2SB1202FAST	
Q519	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q520	8-729-424-08	TRANSISTOR UN2111	
Q521	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q522	8-729-424-18	TRANSISTOR UN2113	
Q523	8-729-024-31	TRANSISTOR XN1111-TX	
Q524	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q525	8-729-807-12	TRANSISTOR 2SD1802-S	
Q526	8-729-424-59	TRANSISTOR UN2212	
Q527	8-729-021-94	TRANSISTOR 2SK1657-T1B	
		< RESISTOR >	
R9	1-216-073-00	METAL CHIP 10K 5%	1/10W
R11	1-216-097-00	RES, CHIP 100K 5%	1/10W
R12	1-216-097-00	RES, CHIP 100K 5%	1/10W
R15	1-216-833-11	METAL CHIP 10K 5%	1/16W
R16	1-216-821-11	METAL CHIP 1K 5%	1/16W
R17	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R18	1-216-065-00	RES, CHIP 4.7K 5%	1/10W
R19	1-216-821-11	METAL CHIP 1K 5%	1/16W
R20	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R21	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R22	1-216-837-11	METAL CHIP 22K 5%	1/16W
R23	1-216-025-00	RES, CHIP 100 5%	1/10W
R24	1-216-041-00	METAL CHIP 470 5%	1/10W
R25	1-216-073-00	METAL CHIP 10K 5%	1/10W
R26	1-216-081-00	METAL CHIP 22K 5%	1/10W
R27	1-216-295-00	SHORT 0	
R28	1-216-815-11	METAL CHIP 330 5%	1/16W
R31	1-216-073-00	METAL CHIP 10K 5%	1/10W
R35	1-216-073-00	METAL CHIP 10K 5%	1/10W
R36	1-216-081-00	METAL CHIP 22K 5%	1/10W
R37	1-216-073-00	METAL CHIP 10K 5%	1/10W
R38	1-216-105-00	METAL CHIP 220K 5%	1/10W
R63	1-216-057-00	METAL CHIP 2.2K 5%	1/10W (E)
R63	1-216-065-00	RES, CHIP 4.7K 5%	1/10W (US)
R71	1-216-085-00	METAL CHIP 33K 5%	1/10W
R72	1-216-033-00	METAL CHIP 220 5%	1/10W (E)
R72	1-216-065-00	RES, CHIP 4.7K 5%	1/10W (US)
R73	1-216-085-00	METAL CHIP 33K 5%	1/10W
R74	1-216-085-00	METAL CHIP 33K 5%	1/10W
R75	1-216-033-00	METAL CHIP 220 5%	1/10W (E)
R75	1-216-065-00	RES, CHIP 4.7K 5%	1/10W (US)
R76	1-216-089-00	RES, CHIP 47K 5%	1/10W
R87	1-216-295-00	SHORT 0	
R100	1-216-675-11	METAL CHIP 10K 0.5%	1/10W
R101	1-216-663-11	METAL CHIP 3.3K 0.5%	1/10W
R102	1-216-298-00	METAL CHIP 2.2 5%	1/10W
R103	1-216-298-00	METAL CHIP 2.2 5%	1/10W
R104	1-216-298-00	METAL CHIP 2.2 5%	1/10W
R105	1-216-298-00	METAL CHIP 2.2 5%	1/10W
R106	1-216-298-00	METAL CHIP 2.2 5%	1/10W
R107	1-216-073-00	METAL CHIP 10K 5%	1/10W
R108	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R109	1-216-190-00	RES, CHIP 470 5%	1/8W
R110	1-216-089-00	RES, CHIP 47K 5%	1/10W
R111	1-216-089-00	RES, CHIP 47K 5%	1/10W
R112	1-216-089-00	RES, CHIP 47K 5%	1/10W
R113	1-216-089-00	RES, CHIP 47K 5%	1/10W

MAIN

Ref. No.	Part No.	Description			Remark
R114	1-216-089-00	RES, CHIP	47K	5%	1/10W
R115	1-216-089-00	RES, CHIP	47K	5%	1/10W
R116	1-216-073-00	METAL CHIP	10K	5%	1/10W
R117	1-216-073-00	METAL CHIP	10K	5%	1/10W
R200	1-216-073-00	METAL CHIP	10K	5%	1/10W
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W
R202	1-216-833-11	METAL CHIP	10K	5%	1/16W
R203	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R204	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R205	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (E)
R205	1-216-295-00	SHORT	0 (US)		
R206	1-216-833-11	METAL CHIP	10K	5%	1/16W
R207	1-216-833-11	METAL CHIP	10K	5%	1/16W
R208	1-216-833-11	METAL CHIP	10K	5%	1/16W
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W
R210	1-216-076-00	METAL CHIP	13K	5%	1/10W
R211	1-216-086-00	RES, CHIP	36K	5%	1/10W
R212	1-216-082-00	RES, CHIP	24K	5%	1/10W
R213	1-216-082-00	RES, CHIP	24K	5%	1/10W
R214	1-216-086-00	RES, CHIP	36K	5%	1/10W
R215	1-216-033-00	METAL CHIP	220	5%	1/10W
R216	1-216-033-00	METAL CHIP	220	5%	1/10W
R217	1-216-081-00	METAL CHIP	22K	5%	1/10W
R218	1-216-081-00	METAL CHIP	22K	5%	1/10W
R219	1-216-049-11	RES, CHIP	1K	5%	1/10W
R220	1-216-049-11	RES, CHIP	1K	5%	1/10W
R221	1-216-049-11	RES, CHIP	1K	5%	1/10W
R222	1-216-049-11	RES, CHIP	1K	5%	1/10W
R231	1-216-081-00	METAL CHIP	22K	5%	1/10W
R232	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R234	1-216-085-00	METAL CHIP	33K	5%	1/10W
R235	1-216-033-00	METAL CHIP	220	5%	1/10W
R236	1-216-081-00	METAL CHIP	22K	5%	1/10W
R241	1-216-077-00	METAL CHIP	15K	5%	1/10W
R251	1-216-025-00	RES, CHIP	100	5%	1/10W
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W
R300	1-216-073-00	METAL CHIP	10K	5%	1/10W
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W
R302	1-216-833-11	METAL CHIP	10K	5%	1/16W
R303	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R304	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R305	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (E)
R305	1-216-295-00	SHORT	0 (US)		
R306	1-216-833-11	METAL CHIP	10K	5%	1/16W
R307	1-216-833-11	METAL CHIP	10K	5%	1/16W
R308	1-216-833-11	METAL CHIP	10K	5%	1/16W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-076-00	METAL CHIP	13K	5%	1/10W
R311	1-216-086-00	RES, CHIP	36K	5%	1/10W
R312	1-216-082-00	RES, CHIP	24K	5%	1/10W
R313	1-216-082-00	RES, CHIP	24K	5%	1/10W
R314	1-216-086-00	RES, CHIP	36K	5%	1/10W
R315	1-216-033-00	METAL CHIP	220	5%	1/10W
R316	1-216-033-00	METAL CHIP	220	5%	1/10W
R317	1-216-081-00	METAL CHIP	22K	5%	1/10W
R318	1-216-081-00	METAL CHIP	22K	5%	1/10W
R319	1-216-049-11	RES, CHIP	1K	5%	1/10W
R320	1-216-049-11	RES, CHIP	1K	5%	1/10W
R331	1-216-081-00	METAL CHIP	22K	5%	1/10W
R332	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R334	1-216-085-00	METAL CHIP	33K	5%	1/10W
R335	1-216-033-00	METAL CHIP	220	5%	1/10W
R336	1-216-081-00	METAL CHIP	22K	5%	1/10W
R341	1-216-077-00	METAL CHIP	15K	5%	1/10W
R356	1-216-809-11	METAL CHIP	100	5%	1/16W
R357	1-216-833-11	METAL CHIP	10K	5%	1/16W
R400	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R401	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R402	1-216-101-00	METAL CHIP	150K	5%	1/10W
R403	1-216-085-00	METAL CHIP	33K	5%	1/10W
R404	1-216-049-11	RES, CHIP	1K	5%	1/10W
R405	1-216-049-11	RES, CHIP	1K	5%	1/10W
R406	1-216-049-11	RES, CHIP	1K	5%	1/10W
R407	1-216-833-11	METAL CHIP	10K	5%	1/16W
R408	1-216-833-11	METAL CHIP	10K	5%	1/16W
R409	1-216-833-11	METAL CHIP	10K	5%	1/16W
R410	1-216-845-11	METAL CHIP	100K	5%	1/16W
R411	1-216-845-11	METAL CHIP	100K	5%	1/16W
R412	1-216-845-11	METAL CHIP	100K	5%	1/16W
R413	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R414	1-216-295-00	SHORT	0		
R419	1-216-073-00	METAL CHIP	10K	5%	1/10W
R420	1-216-073-00	METAL CHIP	10K	5%	1/10W
R421	1-216-073-00	METAL CHIP	10K	5%	1/10W
R422	1-216-081-00	METAL CHIP	22K	5%	1/10W
R423	1-216-081-00	METAL CHIP	22K	5%	1/10W
R424	1-216-081-00	METAL CHIP	22K	5%	1/10W
R425	1-216-081-00	METAL CHIP	22K	5%	1/10W
R428	1-216-073-00	METAL CHIP	10K	5%	1/10W
R429	1-216-833-11	METAL CHIP	10K	5%	1/16W
R430	1-216-833-11	METAL CHIP	10K	5%	1/16W
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W
R432	1-216-833-11	METAL CHIP	10K	5%	1/16W
R433	1-216-073-00	METAL CHIP	10K	5%	1/10W
R434	1-216-081-00	METAL CHIP	22K	5%	1/10W
R435	1-216-081-00	METAL CHIP	22K	5%	1/10W
R445	1-216-073-00	METAL CHIP	10K	5%	1/10W
R446	1-216-073-00	METAL CHIP	10K	5%	1/10W
R500	1-216-097-00	RES, CHIP	100K	5%	1/10W
R501	1-216-097-00	RES, CHIP	100K	5%	1/10W
R502	1-216-097-00	RES, CHIP	100K	5%	1/10W
R503	1-216-097-00	RES, CHIP	100K	5%	1/10W
R504	1-216-101-00	METAL CHIP	150K	5%	1/10W
R506	1-216-097-00	RES, CHIP	100K	5%	1/10W
R507	1-216-097-00	RES, CHIP	100K	5%	1/10W
R508	1-216-049-11	RES, CHIP	1K	5%	1/10W
R509	1-216-073-00	METAL CHIP	10K	5%	1/10W
R510	1-216-097-00	RES, CHIP	100K	5%	1/10W
R511	1-216-194-00	METAL CHIP	680	5%	1/8W
R512	1-216-097-00	RES, CHIP	100K	5%	1/10W
R513	1-216-073-00	METAL CHIP	10K	5%	1/10W
R514	1-216-067-00	METAL CHIP	5.6K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R515	1-216-097-00	RES, CHIP	100K	5%	1/10W
R516	1-216-041-00	METAL CHIP	470	5%	1/10W
R517	1-216-097-00	RES, CHIP	100K	5%	1/10W
R521	1-216-097-00	RES, CHIP	100K	5%	1/10W
R522	1-216-097-00	RES, CHIP	100K	5%	1/10W
R523	1-216-097-00	RES, CHIP	100K	5%	1/10W
R524	1-216-097-00	RES, CHIP	100K	5%	1/10W
R525	1-216-097-00	RES, CHIP	100K	5%	1/10W
R526	1-216-097-00	RES, CHIP	100K	5%	1/10W
R527	1-216-097-00	RES, CHIP	100K	5%	1/10W
R529	1-216-833-11	METAL CHIP	10K	5%	1/16W
R530	1-216-833-11	METAL CHIP	10K	5%	1/16W
R531	1-216-839-11	METAL CHIP	33K	5%	1/16W
R532	1-216-845-11	METAL CHIP	100K	5%	1/16W
R533	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R534	1-216-001-00	METAL CHIP	10	5%	1/10W
R535	1-216-158-00	RES, CHIP	22	5%	1/8W
R536	1-216-158-00	RES, CHIP	22	5%	1/8W
R537	1-216-095-00	METAL CHIP	82K	5%	1/10W
R538	1-216-097-00	RES, CHIP	100K	5%	1/10W
R539	1-216-853-11	METAL CHIP	470K	5%	1/16W
R540	1-216-194-00	METAL CHIP	680	5%	1/8W
R541	1-216-194-00	METAL CHIP	680	5%	1/8W
R542	1-216-089-00	RES, CHIP	47K	5%	1/10W
R543	1-216-085-00	METAL CHIP	33K	5%	1/10W
R548	1-216-033-00	METAL CHIP	220	5%	1/10W
R549	1-216-033-00	METAL CHIP	220	5%	1/10W
R550	1-216-033-00	METAL CHIP	220	5%	1/10W
R556	1-216-813-11	METAL CHIP	220	5%	1/16W
R557	1-216-813-11	METAL CHIP	220	5%	1/16W
R561	1-216-024-00	RES, CHIP	91	5%	1/10W
R562	1-216-089-00	RES, CHIP	47K	5%	1/10W
R564	1-208-462-41	RES, CHIP	10K	2%	1/10W
R565	1-208-462-41	RES, CHIP	10K	2%	1/10W
R566	1-218-871-11	RES, CHIP	10K	2%	1/16W
R567	1-218-871-11	RES, CHIP	10K	2%	1/16W
R568	1-216-845-11	METAL CHIP	100K	5%	1/16W
R569	1-216-845-11	METAL CHIP	100K	5%	1/16W
R570	1-216-206-00	RES, CHIP	2.2K	5%	1/8W
R571	1-216-073-00	METAL CHIP	10K	5%	1/10W
R572	1-216-089-00	RES, CHIP	47K	5%	1/10W
R573	1-216-089-00	RES, CHIP	47K	5%	1/10W
R574	1-216-081-00	METAL CHIP	22K	5%	1/10W
R575	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R576	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R577	1-216-073-00	METAL CHIP	10K	5%	1/10W
R578	1-216-089-00	RES, CHIP	47K	5%	1/10W
R579	1-216-089-00	RES, CHIP	47K	5%	1/10W
R580	1-216-081-00	METAL CHIP	22K	5%	1/10W
R581	1-216-097-00	RES, CHIP	100K	5%	1/10W
R582	1-216-049-11	RES, CHIP	1K	5%	1/10W
R583	1-216-049-11	RES, CHIP	1K	5%	1/10W
R585	1-216-049-11	RES, CHIP	1K	5%	1/10W
R586	1-216-097-00	RES, CHIP	100K	5%	1/10W
R587	1-216-017-00	RES, CHIP	47	5%	1/10W
R588	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R589	1-216-025-00	RES, CHIP	100	5%	1/10W
R590	1-216-025-00	RES, CHIP	100	5%	1/10W
R591	1-216-089-00	RES, CHIP	47K	5%	1/10W
R592	1-216-097-00	RES, CHIP	100K	5%	1/10W
R593	1-216-049-11	RES, CHIP	1K	5%	1/10W
R595	1-216-097-00	RES, CHIP	100K	5%	1/10W
R596	1-216-097-00	RES, CHIP	100K	5%	1/10W
R601	1-216-845-11	METAL CHIP	100K	5%	1/16W
R602	1-216-049-11	RES, CHIP	1K	5%	1/10W
R603	1-216-025-00	RES, CHIP	100	5%	1/10W
R604	1-216-097-00	RES, CHIP	100K	5%	1/10W
R605	1-216-025-00	RES, CHIP	100	5%	1/10W
R606	1-216-097-00	RES, CHIP	100K	5%	1/10W
R608	1-216-025-00	RES, CHIP	100	5%	1/10W
R609	1-216-025-00	RES, CHIP	100	5%	1/10W
R610	1-216-049-11	RES, CHIP	1K	5%	1/10W
R611	1-216-049-11	RES, CHIP	1K	5%	1/10W
R612	1-216-049-11	RES, CHIP	1K	5%	1/10W
R613	1-216-049-11	RES, CHIP	1K	5%	1/10W
R614	1-216-049-11	RES, CHIP	1K	5%	1/10W
R615	1-216-049-11	RES, CHIP	1K	5%	1/10W
R616	1-216-097-00	RES, CHIP	100K	5%	1/10W
R617	1-216-097-00	RES, CHIP	100K	5%	1/10W
R618	1-216-097-00	RES, CHIP	100K	5%	1/10W
R619	1-216-049-11	RES, CHIP	1K	5%	1/10W
R620	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R621	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R623	1-216-049-11	RES, CHIP	1K	5%	1/10W
R624	1-216-097-00	RES, CHIP	100K	5%	1/10W

< CONPOSITION CIRCUIT BLOCK >

RB501	1-233-810-21	RES, NETWORK 100K (3216)
RB502	1-233-810-21	RES, NETWORK 100K (3216)
RB503	1-216-182-00	RES, CHIP NETWORK 220 (3216)
RB504	1-233-578-11	RES, NETWORK 47K (3216)
RB505	1-233-412-11	RES, CHIP NETWORK 1K (3216)
RB506	1-216-182-00	RES, CHIP NETWORK 220 (3216)

< SWITCH >

SW400	1-762-284-11	SWITCH, SLIDE (LINE OUT/IN SELECT)
SW500	1-572-552-21	SWITCH, SLIDE (POWER SELECT)
SW501	1-572-552-21	SWITCH, SLIDE (FREQUENCY SELECT) (E)
SW503	1-571-754-31	SWITCH, PUSH (1 KEY) (NOSE)

< TRANSFORMER >

T501	1-431-831-11	TRANSFORMER, OSCILLATION (EL)

< TUNER >

TU1	A-3282-045-A	TUNER UNIT TUX-012 (E)

< VIBRATOR >

X1	1-577-126-61	VIBRATOR, CRYSTAL (7.2MHz)
X500	1-767-833-21	VIBRATOR, CERAMIC (3.68MHz)
X501	1-579-886-21	VIBRATOR, CRYSTAL (32kHz)
X502	1-577-101-11	VIBRATOR, CERAMIC (4MHz)

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SUB RELAY | SERVO

Ref. No.	Part No.	Description			Remark
*	1-670-311-11	SUB RELAY BOARD			
		**********			
		< CONNECTOR >			
CN701	1-779-170-11	SOCKET, CONNECTOR 20P			
CN702	1-779-169-11	SOCKET, CONNECTOR 18P			
		< LED >			
LED702	8-719-064-72	LED BG1101F-10-TR (ILLUMINATION)			
LED703	8-719-038-07	LED CL-190PG-CD-T (⏏)			
		< SWITCH >			
LSW701	1-762-619-11	SWITCH, KEY BOARD (WITH LED) (⏏)			
		< RESISTOR >			
R701	1-216-033-00	METAL CHIP	220	5%	1/10W
		< SWITCH >			
SW701	1-572-921-11	SWITCH, KEY BOARD (RESET)			
**********					
*	A-3317-122-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C102	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C104	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C105	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C106	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C201	1-104-543-11	FILM CHIP	0.0022uF	5%	50V
C202	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C301	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C302	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C304	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C305	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C306	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C307	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C308	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C309	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C310	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C311	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C314	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C315	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C316	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C317	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C318	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C319	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C320	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C321	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C322	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C324	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V

Ref. No.	Part No.	Description			Remark
C325	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C326	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C327	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C328	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C329	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C330	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C331	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C333	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C334	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C335	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C337	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C338	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C339	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C340	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C341	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C342	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C343	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C344	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C345	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C346	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C347	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C348	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C349	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C350	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C351	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C352	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C353	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C356	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C357	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C358	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C359	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C361	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C362	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C402	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C403	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C501	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C504	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C505	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C506	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C510	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C512	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C513	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C514	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C515	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C516	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN101	1-779-389-21	HOUSING, CONNECTOR (PC BOARD) 30P			
CN102	1-573-929-11	CONNECTOR, FFC/FPC (ZIF) 20P			
CN103	1-764-439-21	CONNECTOR, FPC 11P			
		< DIODE >			
D401	8-719-157-93	DIODE RD3.0SB2			
D501	8-719-988-62	DIODE 1SS355			

Ref. No.	Part No.	Description			Remark
		< FERRITE BEAD >			
FB301	1-414-235-11	INDUCTOR CHIP 0uH			
FB302	1-414-385-11	INDUCTOR CHIP 0uH			
		< IC >			
IC101	8-759-456-13	IC PCM1718E-T1			
IC301	8-752-384-47	IC CXD2652AR			
IC302	8-752-074-77	IC CXA2523R			
IC303	8-759-430-25	IC BH6511FS-E2			
IC304	8-759-096-87	IC TC7WU04FU (TE12R)			
IC305	8-759-040-83	IC BA6287F			
IC306	8-759-058-62	IC TC7S08FU (TE85R)			
IC307	8-759-498-44	IC MSM51V4400-70TS-K			
IC401	8-759-909-71	IC BA4558F			
IC501	8-752-898-83	IC CXP84340-201Q			
IC502	8-759-238-47	IC TC74HCT7007AF (EL)			
IC503	8-759-238-47	IC TC74HCT7007AF (EL)			
		< COIL >			
L101	1-412-058-11	INDUCTOR CHIP 10uH			
L102	1-412-058-11	INDUCTOR CHIP 10uH			
L301	1-412-058-11	INDUCTOR CHIP 10uH			
L302	1-412-058-11	INDUCTOR CHIP 10uH			
L303	1-412-039-51	INDUCTOR CHIP 100uH			
L304	1-412-039-51	INDUCTOR CHIP 100uH			
L305	1-412-039-51	INDUCTOR CHIP 100uH			
L306	1-412-039-51	INDUCTOR CHIP 100uH			
L501	1-412-058-11	INDUCTOR CHIP 10uH			
		< TRANSISTOR >			
Q301	8-729-230-49	TRANSISTOR 2SC2712-YG			
Q302	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R			
Q401	8-729-920-85	TRANSISTOR 2SD1664-QR			
Q402	8-729-106-60	TRANSISTOR 2SB1115A			
Q403	8-729-421-22	TRANSISTOR UN2211			
		< RESISTOR >			
R101	1-216-073-00	METAL CHIP	10K	5%	1/10W
R102	1-216-833-11	METAL CHIP	10K	5%	1/16W
R104	1-216-049-11	RES, CHIP	1K	5%	1/10W
R201	1-216-073-00	METAL CHIP	10K	5%	1/10W
R202	1-216-049-11	RES, CHIP	1K	5%	1/10W
R301	1-216-809-11	METAL CHIP	100	5%	1/16W
R302	1-216-809-11	METAL CHIP	100	5%	1/16W
R303	1-216-809-11	METAL CHIP	100	5%	1/16W
R304	1-216-809-11	METAL CHIP	100	5%	1/16W
R305	1-216-809-11	METAL CHIP	100	5%	1/16W
R306	1-216-809-11	METAL CHIP	100	5%	1/16W
R307	1-216-809-11	METAL CHIP	100	5%	1/16W
R308	1-216-809-11	METAL CHIP	100	5%	1/16W
R311	1-216-821-11	METAL CHIP	1K	5%	1/16W
R312	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R316	1-216-821-11	METAL CHIP	1K	5%	1/16W
R317	1-216-809-11	METAL CHIP	100	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R319	1-216-845-11	METAL CHIP	100K	5%	1/16W
R320	1-216-855-11	METAL CHIP	680K	5%	1/16W

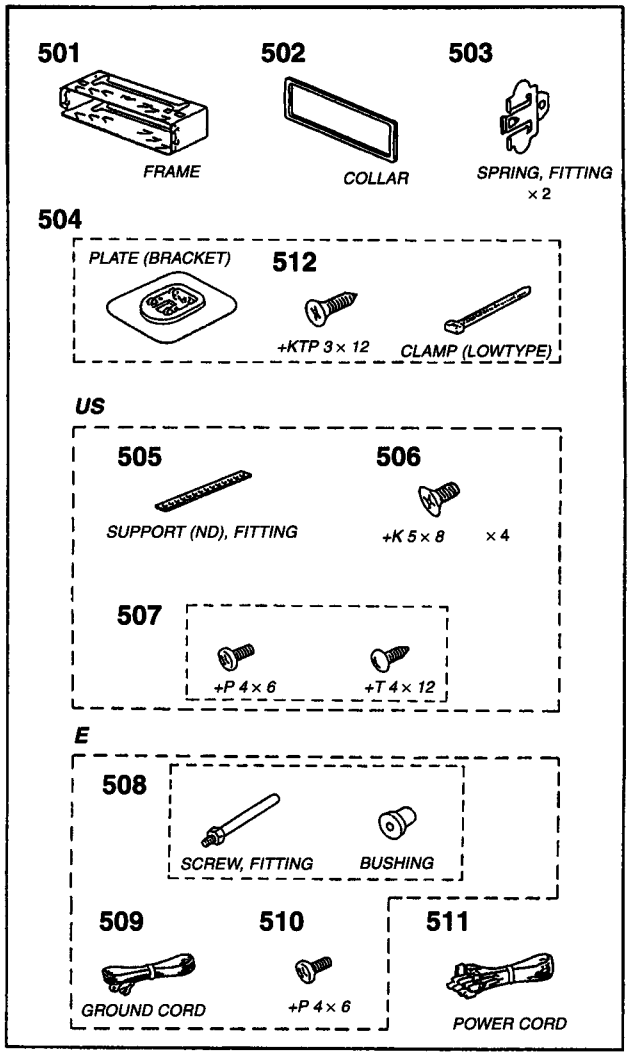
Ref. No.	Part No.	Description			Remark
R324	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R325	1-216-821-11	METAL CHIP	1K	5%	1/16W
R327	1-216-821-11	METAL CHIP	1K	5%	1/16W
R328	1-216-811-11	METAL CHIP	150	5%	1/16W
R329	1-216-819-11	METAL CHIP	680	5%	1/16W
R330	1-216-853-11	METAL CHIP	470K	5%	1/16W
R331	1-216-809-11	METAL CHIP	100	5%	1/16W
R332	1-216-809-11	METAL CHIP	100	5%	1/16W
R333	1-216-819-11	METAL CHIP	680	5%	1/16W
R334	1-216-809-11	METAL CHIP	100	5%	1/16W
R335	1-216-815-11	METAL CHIP	330	5%	1/16W
R336	1-216-853-11	METAL CHIP	470K	5%	1/16W
R337	1-216-853-11	METAL CHIP	470K	5%	1/16W
R338	1-216-833-11	METAL CHIP	10K	5%	1/16W
R339	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R340	1-216-843-11	METAL CHIP	68K	5%	1/16W
R341	1-216-837-11	METAL CHIP	22K	5%	1/16W
R342	1-216-833-11	METAL CHIP	10K	5%	1/16W
R343	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R344	1-216-833-11	METAL CHIP	10K	5%	1/16W
R345	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R346	1-216-841-11	METAL CHIP	47K	5%	1/16W
R347	1-216-833-11	METAL CHIP	10K	5%	1/16W
R348	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W
R349	1-216-025-00	RES, CHIP	100	5%	1/10W
R350	1-216-142-00	RES, CHIP	4.7	5%	1/8W
R351	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R352	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R353	1-218-700-11	METAL CHIP	2.2K	0.50%	1/16W
R354	1-216-857-11	METAL CHIP	1M	5%	1/16W
R355	1-216-833-11	METAL CHIP	10K	5%	1/16W
R356	1-216-833-11	METAL CHIP	10K	5%	1/16W
R357	1-216-017-00	RES, CHIP	47	5%	1/10W
R401	1-216-073-00	METAL CHIP	10K	5%	1/10W
R402	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R403	1-216-065-00	RES, CHIP	4.7K	5%	1/10W
R404	1-216-809-11	METAL CHIP	100	5%	1/16W
R405	1-218-692-11	METAL CHIP	1K	0.50%	1/16W
R406	1-218-714-11	METAL CHIP	8.2K	0.50%	1/16W
R501	1-216-821-11	METAL CHIP	1K	5%	1/16W
R502	1-216-821-11	METAL CHIP	1K	5%	1/16W
R503	1-216-821-11	METAL CHIP	1K	5%	1/16W
R504	1-216-821-11	METAL CHIP	1K	5%	1/16W
R505	1-216-821-11	METAL CHIP	1K	5%	1/16W
R506	1-216-845-11	METAL CHIP	100K	5%	1/16W
R507	1-218-708-11	METAL CHIP	4.7K	0.50%	1/16W
R510	1-216-845-11	METAL CHIP	100K	5%	1/16W
R511	1-216-847-11	METAL CHIP	150K	5%	1/16W
R512	1-216-845-11	METAL CHIP	100K	5%	1/16W
R516	1-216-809-11	METAL CHIP	100	5%	1/16W
R517	1-216-809-11	METAL CHIP	100	5%	1/16W
R518	1-216-809-11	METAL CHIP	100	5%	1/16W
R519	1-216-809-11	METAL CHIP	100	5%	1/16W
R520	1-216-809-11	METAL CHIP	100	5%	1/16W
R521	1-216-809-11	METAL CHIP	100	5%	1/16W
R522	1-216-821-11	METAL CHIP	1K	5%	1/16W
R523	1-216-821-11	METAL CHIP	1K	5%	1/16W

SERVO

Ref. No.	Part No.	Description			Remark
R524	1-216-821-11	METAL CHIP	1K	5%	1/16W
R525	1-216-845-11	METAL CHIP	100K	5%	1/16W
R526	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R527	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R528	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R529	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R530	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R531	1-216-845-11	METAL CHIP	100K	5%	1/16W
R532	1-216-864-11	METAL CHIP	0	5%	1/16W
R533	1-216-845-11	METAL CHIP	100K	5%	1/16W
R534	1-216-845-11	METAL CHIP	100K	5%	1/16W
R535	1-216-845-11	METAL CHIP	100K	5%	1/16W
R536	1-216-864-11	METAL CHIP	0	5%	1/16W
R537	1-216-809-11	METAL CHIP	100	5%	1/16W
R538	1-216-845-11	METAL CHIP	100K	5%	1/16W
R539	1-216-845-11	METAL CHIP	100K	5%	1/16W
R540	1-216-845-11	METAL CHIP	100K	5%	1/16W
R542	1-216-845-11	METAL CHIP	100K	5%	1/16W
R545	1-216-864-11	METAL CHIP	0	5%	1/16W
		< CONPOSITION CIRCUIT BLOCK >			
RB301	1-233-576-11	RES, CHIP NETWORK 100			
RB302	1-233-576-11	RES, CHIP NETWORK 100			
RB503	1-233-412-11	RES, CHIP NETWORK 1.0K (3216)			
		< THERMISTOR >			
TH501	1-810-421-11	THERMISTOR NTH5G36B103K01TE			
		< VIBRATOR >			
X301	1-767-429-21	VIBRATOR, CRYSTAL (22.5792MHz)			
X501	1-760-365-11	VIBRATOR, CERAMIC (10MHz)			
**********					
		MISCELLANEOUS			
		**********			
24	1-776-207-72	CORD (WITH CONNECTOR) (POWER)			
26	1-783-862-31	CORD (WITH CONNECTOR) (RCA) (SUB/EQ OUT, BUS AUDIO IN)			
27	1-783-862-41	CORD (WITH CONNECTOR) (RCA) (FRONT LINE OUT/IN, REAR LINE OUT/IN)			
151	1-654-693-11	SENSOR FLEXIBLE BOARD			
⚠169	8-583-037-02	OPTICAL PICK-UP KMS-241A/J2RP			
F1	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10A)			
M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)			
M902	A-3291-190-A	MOTOR ASSY, SL (SLED)			
M903	A-3291-191-A	MOTOR ASSY, LO (LOADING)			
**********					
		**********			
		HARDWARE LIST			
		**********			
#1	7-621-772-20	SCREW +B 2X5			
#2	7-685-792-09	SCREW +PTT 2.6X6 (S)			
#3	7-621-255-15	SCREW +P 2X3			
#4	7-685-794-09	SCREW +PTT 2.6X10 (S)			
#5	7-685-851-04	SCREW +BVTT 2X4 (S)			
#6	7-624-102-04	STOP RING 1.5, TYPE -E			

Ref. No.	Part No.	Description	Remark
#7	7-627-852-37	PRECISION SCREW +P1.7X1.8 TYPE3	
#8	7-621-772-08	SCREW +B 2X3	
#9	7-621-555-10	SCREW +K 2X3	
#10	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#11	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-473-067-71	REMOTE COMMANDER (RM-X4S) (E)	
	1-475-916-31	REMOTE COMMANDER (RM-X4S) (US)	
	3-012-070-01	LABEL (SOUND) (2) (for RM-X4S)	
	3-864-030-11	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-864-030-31	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE) (E)	
	3-864-031-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (US)	
	3-864-031-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE) (E)	
	X-3373-926-1	CASE ASSY (XR) (for FRONT PANEL)	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
501	3-009-613-21	FRAME	
502	3-022-310-21	COLLAR	
503	3-934-787-01	SPRING, FITTING	
504	X-3373-432-1	BRACKET ASSY (for RM-X4S)	
505	3-924-961-01	SUPPORT (ND), FITTING (US)	
506	3-934-325-01	SCREW, +K (5X8) TAPPING (US)	
507	X-3368-725-1	SCREW ASSY, FITTING (US)	
508	X-3366-405-1	SCREW ASSY (EXP), FITTING (E)	
509	1-775-543-11	CORD, GROUND (E)	
510	7-682-560-04	SCREW +P 4X6 (E)	
511	1-776-207-72	CORD (WITH CONNECTOR) (POWER)	
512	7-685-248-14	SCREW +KTP 3X12 TYPE4	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.


501
FRAME
502
COLLAR
503
SPRING, FITTING
× 2
504
PLATE (BRACKET)
512
+KTP 3 × 12
CLAMP (LOWTYPE)
US
505
SUPPORT (ND), FITTING
506
+K 5 × 8
× 4
507
+P 4 × 6
+T 4 × 12
E
508
SCREW, FITTING
BUSHING
509
GROUND CORD
510
+P 4 × 6
511
POWER CORD

9-925-969-11

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Personal & Mobile Communication Company

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